

**Women livelihood in agriculture: A sociological study in
Kurukshetra district Haryana**

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By

Sushma Devi

Registration Number: 12108166

Supervised By

Dr. Sudha Dubey (28742)

Assistant Professor

Sociology [School of Liberal and Creative Arts (Social Sciences & Languages)]



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DECLARATION

I, hereby declared that the presented work in the thesis entitled “Women livelihood in agriculture: A sociological study in Kurukshetra district Haryana” in fulfilment of degree of **Doctor of Philosophy (Ph. D.)** is outcome of research work carried out by me under the supervision of Dr. Sudha Dubey, working as Assistant Professor, in the department of Sociology [School of Liberal and Creative Arts (Social Sciences & Languages)] of Lovely Professional University, Punjab, India. In keeping with general practice of reporting scientific observations, due acknowledgements have been made whenever work described here has been based on findings of other investigator. This work has not been submitted in part or full to any other University or Institute for the award of any degree.

(Signature of Scholar)

Name of the scholar: Sushma Devi

Registration No.: 12108166

Department/school: Department of Sociology [School of Liberal and Creative Arts (Social Sciences & Languages)]

Lovely Professional University,

Punjab, India

CERTIFICATE

This is to certify that the work reported in the Ph. D. thesis entitled “Women livelihood in agriculture: A sociological study in Kurukshetra district Haryana” submitted in fulfillment of the requirement for the award of degree of **Doctor of Philosophy (Ph.D.)** in the department of Sociology [School of Liberal and Creative Arts (Social Sciences & Languages)], is a research work carried out by Sushma Devi (12108166), is Bonafide record of his/her original work carried out under my supervision and that no part of thesis has been submitted for any other degree, diploma or equivalent course.

(Signature of Supervisor)

Name of supervisor: Dr. Sudha Dubey

Designation: Assistant Professor (28742)

Department/school: Department of Sociology [School of Liberal and Creative Arts (Social Sciences & Languages)]

University: Lovely Professional University

Punjab, India

PREFACE

Agriculture has always been the backbone of India's economy, and in states like Haryana, it plays a crucial role in shaping livelihoods, especially for women. However, despite their significant contribution—women make up nearly 75% of the agricultural workforce in rural Haryana—their work often goes unrecognized, and they face numerous challenges like unequal wages, limited land ownership, and lack of access to resources. In Kurukshetra, a district known for its fertile land and farming traditions, women work long hours in fields, yet their income is often controlled by male family members. Studies show that only about 12% of women in Haryana own agricultural land, even though they perform 60-70% of all farm-related activities. This inequality not only affects their economic independence but also their social status and decision-making power within households and communities.

In Haryana, a significant 80% of rural women are engaged in agricultural activities, contributing immensely to the state's economy. Despite this, their efforts often go unrecognized, and they face numerous challenges. For instance, while women constitute a substantial portion of the agricultural workforce, they own only about 13.87% of operational land holdings. This disparity limits their decision-making power and financial independence. Moreover, women typically work 8-9 hours daily in the fields, followed by an additional 4 hours on household duties. Yet, their wages are often lower than those of their male counterparts, and they have limited access to resources like credit, training, and modern technology.

I decided to undertake this study because there is a pressing need to understand the real struggles and contributions of women in agriculture, particularly in a state like Haryana where patriarchal norms still dominate. Recent data reveals that nearly 80% of rural women in Haryana are engaged in farming, yet very few benefit from government schemes meant for farmers. Additionally, with rising male migration to cities for better jobs, women are increasingly managing farms alone, yet they remain invisible in policy discussions. Through this research, I aim to bring forward their voices, analyze the social and economic barriers they face, and suggest ways to improve their livelihoods. By doing so, I hope this study will contribute to more inclusive agricultural policies and empower women farmers in Kurukshetra and beyond.

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I am deeply indebted to my supervisor, *Dr. Sudha Dubey*, whose guidance, patience, and invaluable insights have been the driving force behind this research. Her constant encouragement and constructive feedback have helped me refine my thoughts, strengthen my arguments, and present this study with greater depth and clarity. Her unwavering support has not only been instrumental in the completion of this thesis but has also inspired me to approach research with curiosity and sincerity.

I would also like to express my heartfelt appreciation to my family and friends, who have stood by me through every challenge and triumph. Their unwavering support, patience, and motivation have given me the strength to push forward even during the most demanding phases of this research. My family's belief in my abilities and my friends' constant encouragement have been my greatest sources of inspiration. Without their emotional and moral support, this journey would not have been possible.

Lastly, I extend my gratitude to the women farmers and participants of this study, whose experiences, struggles, and resilience have been the foundation of this research. Their willingness to share their stories and insights has made this study more meaningful and impactful. It is my sincere hope that this work contributes to greater awareness and positive change in the lives of women engaged in agriculture.

Women livelihood in agriculture: A sociological study in Kurukshetra district Haryana

Abstract:

The agricultural sector has long been the backbone of India's economy, yet the critical role of women in this domain often remains overshadowed by systemic gender disparities and socio-economic constraints. This research, titled "*Women Livelihood in Agriculture: A Sociological Study in Kurukshetra District, Haryana*," explores the intricate dynamics of women's participation in agriculture, emphasizing their contributions, challenges, and the broader socio-cultural factors shaping their livelihoods in the Kurukshetra district.

The primary objective of this study is to examine the socio-economic conditions of women engaged in agricultural activities, understand their roles and responsibilities across various agricultural processes, and identify the structural barriers that limit their access to resources, technology, and decision-making platforms. The research also seeks to analyze the interplay of traditional norms, education, land ownership patterns, and government policies in influencing women's livelihoods in agriculture.

Grounded in a sociological framework, the study employs a mixed-method approach, combining quantitative surveys and qualitative interviews to capture a comprehensive view of women's lived experiences in agriculture. The central hypothesis posits that **women in agriculture face significant socio-economic challenges due to patriarchal structures, lack of access to resources, and limited institutional support, which collectively hinder their empowerment and sustainable livelihoods.**

Key findings from this research reveal that women in Kurukshetra predominantly engage in labour-intensive activities, such as sowing, weeding, and harvesting, yet their contributions are often undervalued and unrecognized. Despite their pivotal role in ensuring food security, a significant gender gap exists in wages, access to land rights, and inclusion in agricultural extension programs. Moreover, cultural norms and a lack of education often restrict women from adopting modern agricultural practices or participating in decision-making processes at both household and community levels.

The study further reveals that while women constitute a significant portion of the agricultural workforce in Kurukshetra, their contributions remain largely informal and invisible within official records and economic assessments. A critical analysis of gendered labour divisions indicates that women are often confined to low-skill, labour-intensive tasks that demand considerable physical effort but offer minimal financial rewards or recognition. This inequitable distribution of labour stems from deeply entrenched patriarchal norms, which perpetuate the notion of agriculture as a male-dominated domain.

Ultimately, this thesis calls for a paradigm shift in the perception and treatment of women in agriculture. Recognizing their contributions, addressing systemic inequalities, and empowering them through education, resources, and policy interventions are critical steps toward building a more inclusive and sustainable agrarian economy. This study not only deepens our understanding of women's lived experiences in agriculture but also offers a roadmap for transformative change that benefits both women and the broader agricultural sector.

Chapter 1

Introduction

1.1 Background and Context of the Study:

1.1.1 The Agricultural Sector as a Cornerstone of Rural Livelihoods in India:

India's economy is based primarily on agriculture, which affects not only the sociocultural fabric of rural areas but also the livelihoods of millions of people. The great majority of people rely on it for social security, work, and sustenance, making it one of the oldest economic endeavours. The industry accounts for roughly 18.3% of the nation's GDP in 2023, making it a major contributor. Furthermore, about 42% of India's workforce is employed in agriculture, highlighting the sector's vital significance in the rural economy. Despite the fast pace of urbanisation and industrialisation, there is still a significant reliance on agriculture, especially in rural households, which make up around 70% of the population. This dependence emphasises how important agriculture is to rural living and the overall economy.

In the context of rural livelihoods, agriculture is not just an economic activity but a way of life. It influences daily routines, decision-making, and social structures. Women, who constitute nearly half of the agricultural workforce, are vital contributors to this sector. Despite limited recognition, their roles span across various domains such as sowing, weeding, harvesting, animal husbandry, and food processing. According to the Agriculture Census (2015-16), women operate about 13.96% of agricultural landholdings in India. Furthermore, the Economic Survey (2017-18) highlighted the increasing "feminization of agriculture," driven by male migration to urban areas, leaving women to shoulder the responsibilities of farming. This trend has significant implications for rural development and women's empowerment, especially in districts like Kurukshetra, Haryana, where agriculture forms the primary source of livelihood.

The value of the agricultural sector goes beyond only producing food. Agro-processing, storage, logistics, and retail are among the ancillary sectors it supports. These sectors boost rural economies and generate job opportunities. In Haryana, for example, where rice and wheat are the main crops, agriculture plays a major role in the state's economy. India's rural economy is based on agriculture, which is the main source of income for a sizable portion of the people and is intricately woven into the country's sociocultural fabric. The reliance of rural households on agriculture has significantly increased in recent years.

According to the NABARD-commissioned All-India Rural Financial Inclusion Survey for 2021–2022, 57% of rural families were categorised as "agricultural" in 2021–2022, a considerable rise from 48% in 2016–17. The "Land of Bhagavad Gita," Kurukshetra district, is an important agricultural centre where farming methods are ingrained in regional customs and culture. High agricultural output is made possible by the region's excellent soils and irrigation infrastructure, which is mostly provided by canals and tubewells. But there are drawbacks to this reliance on agriculture as well, particularly in light of market volatility, climate change, and diminishing water supplies.

In addition to providing economic subsistence, agriculture also plays a social and cultural significance in rural life. For example, in rural India, land ownership is a significant factor in determining social standing. Larger landholdings give families more financial stability and social standing. However, women are frequently marginalised due to the unequal distribution of land and patriarchal customs. Women rarely own land, despite making significant contributions to agriculture. The National Family Health Survey (NFHS-5, 2019–21) shows that women only control roughly 13% of India's agricultural landholdings. This discrepancy emphasises the necessity of legislative measures to advance gender parity in agricultural decision-making and land ownership.

Agricultural practices in India are highly diverse, reflecting the country's varied agro-climatic conditions. From traditional subsistence farming to modern commercial agriculture, the sector encompasses a wide range of activities. This renewed reliance underscores the sector's pivotal role in sustaining rural livelihoods. Agriculture not only provides employment but also ensures food security and supports ancillary industries. According to the Economic Survey 2023-24, agriculture contributes 18.2% to India's GDP, with 42.3% of the population dependent on it.

In this agricultural system, women play a crucial role. According to the 2015–16 Agriculture Census, female operational holders oversaw roughly 11.72% of the nation's total operated area. Additionally, according to the Economic Survey 2017–18, 80% of all economically active women work in the agricultural sector, making up 48% of self-employed farmers and 33% of the agricultural labour force.

Notwithstanding their noteworthy contributions, women in agriculture frequently encounter obstacles such as restricted access to financing facilities, property ownership, and decision-making platforms. For the agriculture industry to grow holistically and for rural women to be empowered, these problems must be resolved.

The Indian government has implemented a number of programs to improve rural livelihoods and strengthen the agriculture industry in response to these issues. Notably, India declared in January 2025 that it would raise the budget for the agriculture sector by almost 15% to \$20 billion, the largest increase in more than six years. In addition to focussing on high-yield seed varieties, better storage and supply facilities, and increased production of pulses, oilseeds, vegetables, and dairy, this budget seeks to help rural incomes and reduce inflation.

Tractors, harvesters, and irrigation pumps are widely used by farmers in Haryana, where mechanised farming is common. Modern technology adoption is still unequal, nevertheless, especially among small and marginal farmers who do not have access to training or funding. Access to agricultural inputs and technologies is further complicated for women farmers in particular. To ensure sustainable livelihoods and increase agricultural output, these gaps must be filled.

Government initiatives and policies are essential for boosting the agriculture industry and raising living standards in rural areas. Rural households have been greatly impacted by programs like the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), which offers wage employment in rural regions, and the Pradhan Mantri Kisan Samman Nidhi (PM-KISAN), which gives farmers direct income support. Furthermore, the Bhavantar Bharpayee Yojana and other programs run by the Haryana government are designed to shield farmers from changes in prices and guarantee equitable compensation for their produce. However, how well these programs are implemented and whether or not marginalised groups—especially women—are included determines how effective they are.

A study by the Indian Council of Agricultural Research (ICAR) across nine states revealed that women's participation is substantial in multiple areas:

- **Major Crop Production:** 75%
- **Horticulture:** 79%
- **Post-Harvest Work:** 51%
- **Animal Husbandry and Fisheries:** 95%

Despite these significant contributions, women often face systemic challenges, including limited access to land ownership, credit facilities, and decision-making platforms. Addressing these issues is crucial for the holistic development of the agricultural sector and the

empowerment of rural women. Recognizing these challenges, the Government of India has implemented policies to support women farmers. Guidelines from the Department of Agriculture and Farmers Welfare mandate that states and implementing agencies allocate at least 30% of expenditure from beneficiary-oriented schemes to women farmers. These schemes encompass areas such as state extension programs, agricultural mechanization, and the National Food Security Mission.

Additionally, to encourage entrepreneurship in agriculture, women participants of the Agri-Clinics and Agri-Business Centres (AC&ABC) program receive a 44% subsidy, compared to 36% for others. With a budget of ₹1,261 crores, the government has approved a Central Sector Scheme to supply drones to Women Self Help Groups (SHGs) between 2024–2025 and 2025–2026. The goal of this program is to increase female farmers' productivity and modernise farming methods. Despite these efforts, problems still exist. While India has put programs in place to address the effects of climate change on agriculture, there are significant gaps in efficiently reaching women farmers, according to research from the CGIAR Gender Platform.

In India, women participate in agriculture in a wide range of ways. From the preparation of the land to the operations that take place after harvest, they are involved in all phases of farming. However, official statistics frequently undervalue and fail to recognise their contributions. In addition to undermining their function, the lack of acknowledgement restricts their access to advantages and resources. The FAO reports that women farmers only receive 5% of extension assistance and 10% of agricultural finance. Targeted actions are needed to address this gap, including training initiatives, gender-sensitive legislation, and financial services accessibility. In order to achieve inclusive rural development and food security, women's empowerment in agriculture is crucial.

The agricultural sector also plays a critical role in addressing rural poverty and unemployment. Small and marginal farmers, who constitute about 86% of India's farming population, depend heavily on agriculture for their livelihoods. In districts like Kurukshetra, where landholdings are relatively small, diversification of income sources is vital. Activities like dairy farming, poultry, and horticulture provide additional income and reduce dependence on traditional crops. Women, in particular, are actively involved in these activities, contributing to household income and food security. Promoting integrated farming systems and value-added products can further enhance rural livelihoods and create sustainable income opportunities.

Given its importance, the agricultural industry faces many obstacles that jeopardise its viability and influence on rural communities. A major threat to agricultural output is climate change, which is typified by erratic weather patterns, rising temperatures, and water scarcity. Concerns over the future of farming in Haryana have been raised by the dramatic drop in water tables caused by the overuse of groundwater for irrigation. The risks of rural households are further increased by unstable markets, poor infrastructure, and weak value chains. A multifaceted strategy is needed to address these issues, involving investments in climate-resilient agriculture, effective water management, and the development of rural infrastructure.

Agriculture remains the cornerstone of rural livelihoods in India, providing sustenance, employment, and social security to millions. Its role extends beyond economic dimensions, influencing social structures and cultural practices. Women, as integral participants in the sector, contribute significantly to its growth and resilience. However, their contributions often go unrecognized, limiting their access to resources and opportunities. In regions like Kurukshetra, Haryana, where agriculture is deeply rooted in tradition and culture, empowering women and addressing systemic challenges are essential for sustainable development. Through targeted policies, technological advancements, and inclusive practices, the agricultural sector can continue to be a driving force for rural prosperity and social equity.

A sizable but frequently under-represented portion of the workforce is made up of women in agriculture. Women make up around one-third of India's agricultural workforce, according to the Ministry of Agriculture and Farmers' Welfare. This number is significantly higher in Haryana since women actively participate in a variety of agricultural tasks, including as planting, weeding, harvesting, and post-harvest processing. Women still face structural obstacles that restrict their access to resources, credit, and decision-making authority, notwithstanding their significant contributions. Approximately 86% of rural households in India rely on agriculture for their livelihoods, according to the 2011 Census, underscoring the sector's vital importance in rural economies. However, the lack of land ownership among women remains a significant challenge, as only about 13% of women in India own land, compared to 87% of men, according to the National Sample Survey Office (NSSO).

Traditional gender roles are at the heart of the complex socioeconomic issues that women in agriculture face. Women frequently shoulder the combined weight of domestic duties and agricultural labour, which can restrict their access to education, skill-building opportunities, and involvement in local decision-making. Women in rural areas had lower literacy rates than males, with only 60% of them being literate, compared to 80% of men, according to the National Family Health Survey (NFHS-5). The difficulties women encounter in gaining access to contemporary agricultural technologies and training—both of which are critical for raising production and income—are made worse by this educational disparity. The NSSO reported that only 12% of women farmers had access to agricultural extension services, compared to 25% of men, underscoring the need for targeted interventions to empower women in agriculture.

In order to shape the agricultural environment and meet the requirements of female farmers, government policies are essential. The significance of gender parity in agricultural growth is emphasised in the National Agricultural Policy (2000) and the National Policy for Women Empowerment (2001). But these policies' actual application frequently falls short. For example, women frequently receive lesser wages and encounter discrimination when trying to obtain employment opportunities, despite the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA)'s goal of giving rural households jobs. According to data from the Ministry of Rural Development, women only make up around 30% of MGNREGA beneficiaries overall, which highlights the need for more inclusive policy initiatives that particularly address the difficulties faced by women in agriculture.

In rural India, Self-Help Groups (SHGs) have become a potent instrument for women's empowerment. These organisations give women access to collective bargaining power, training, and loans. SHGs have played a significant role in encouraging women to engage in agriculture and related fields in Haryana. Over 7 million women belong to Self-Help Groups (SHGs) nationwide, and many of them work in agricultural production and processing, according to the National Rural Livelihoods Mission (NRLM). Because of their capacity to promote camaraderie, boost self-esteem, and offer a venue for skill development, Self-Help Groups (SHGs) have been successful in improving the lives of women. According to reports, the income levels of women who participate in Self-Help Groups (SHGs) have significantly increased, and many of them have switched from subsistence farming to more lucrative agricultural methods.

Technology integration in agriculture has the ability to empower female farmers and greatly increase output. The goal of programs like Digital India is to close the digital divide and give women access to tools and information. Weather forecasts, agricultural best practices, and market information may all be accessed more easily with the help of mobile applications and web platforms. The gender digital divide is still an issue, though, since women have less access to cellphones and the internet than men. In rural regions, only 29% of women have access to the internet, while 54% of males do, according to the Internet and Mobile Association of India (IAMAI). To guarantee that women can take full advantage of agricultural technology developments, this gap must be closed.

Enhancing women's agricultural livelihoods requires education and skill development. Initiatives to increase women's educational and career opportunities can enable them to embrace contemporary farming methods and increase their output. The Deen Dayal Upadhyaya Grameen Kaushalya Yojana (DDU-GKY), which aims to improve the employability of rural young, especially women, is one of the programs the Ministry of Skill Development and Entrepreneurship has started to encourage women's skill development. However, social conventions and prevalent gender prejudices that limit women's mobility and access to training opportunities frequently limit the impact of these programs. In order to question these conventions and encourage women's active involvement in agricultural development, community engagement and awareness-raising campaigns are essential.

Another important issue affecting women's livelihoods in agriculture is their access to financial resources. Women frequently struggle to get loans because they lack financial understanding and collateral. The Reserve Bank of India has put in place a number of programs to make it easier for women to obtain credit because it understands how important financial inclusion is. Nonetheless, women farmers continue to use these programs at a modest rate. Only 27% of female farmers have access to formal credit, whereas 43% of male farmers do, according to the NABARD All India Rural Financial Inclusion Survey. This discrepancy emphasises how urgently targeted financial literacy campaigns and microfinance programs that specifically target women in agriculture are needed.

The impact of climate change on agriculture further exacerbates the vulnerabilities faced by women farmers. As climate variability affects crop yields and food security, women, who are often responsible for managing household food supplies, bear the brunt of these challenges. The Ministry of Earth Sciences has reported that India is experiencing an increase in extreme weather events, including droughts and floods, which disproportionately affect rural communities. Women, who typically have less access to resources and information, are often less equipped to adapt to these changes. Therefore, integrating gender-sensitive approaches in climate adaptation strategies is essential to enhance the resilience of women farmers.

In addition to these difficulties, women's contributions to agricultural value chains are frequently disregarded. Post-harvest operations, such as the processing, storing, and marketing of agricultural products, heavily involve women. In contrast to their male counterparts, they usually receive lower prices for their crops, and their contributions are frequently underappreciated. In order to advance gender equality and enhance lives, the Food and Agriculture Organisation (FAO) has underlined how critical it is to acknowledge and appreciate women's contributions to agricultural value chains. For their families and communities, empowering women in these fields can result in higher incomes and better food security.

Women's experiences in agriculture are also significantly shaped by the intersections of gender, caste, and class. Women from under-represented groups frequently have exacerbated disadvantages that restrict their access to opportunities, resources, and education. In order to address the particular difficulties faced by women from various socioeconomic backgrounds, the National Commission for Women has emphasised the necessity of intersectional approaches in policymaking. Policies can be better adapted to address the unique needs of women in agriculture and advance inclusive development by acknowledging their varied experiences.

In conclusion, women play an important but frequently overlooked role in India's agricultural industry, which is undoubtedly a pillar of rural livelihoods. A multifaceted strategy involving regulatory changes, resource access, education, and technology is needed to address the difficulties experienced by women in agriculture. In addition to improving their standard of living, empowering women in agriculture advances the general well-being of rural communities. Prioritising gender parity and making sure that women are at the forefront of agricultural policy and practices are crucial as India continues to negotiate the challenges of

agricultural development. By doing this, the agriculture industry may genuinely act as a driving force behind rural development that is sustainable and raises everyone's standard of living.

1.1.2 The Pivotal Yet Frequently Overlooked Contributions of Women to the Agricultural Landscape of India:

For a sizable section of India's rural population, the agricultural sector continues to be their main source of income, supporting the social, cultural, and economic fabric of rural communities. Women have a crucial but usually underappreciated role in this industry, frequently making greater contributions to agricultural output than are recognised by conventional agricultural policy, economic models, or research. They are involved in a wide range of tasks, including post-harvest processing, animal management, agricultural cultivation, and water management. Despite their significant contributions, women's labour in agriculture is still undervalued and underpaid, frequently due to the perception that it is an extension of domestic work rather than official economic employment. This paradox is especially evident in rural districts like Kurukshetra in Haryana, where agriculture is the backbone of the economy, but the recognition of women's contributions to this sector remains inadequate.

In India, approximately 43 to 45 percent of the rural workforce is employed in agriculture, and women play a significant role in this sector. Despite accounting for only 28% of the agricultural workforce, women actively engage in agricultural activities at a much higher rate, as revealed by the 2011 census. Research indicates that women are responsible for approximately 60 to 70 percent of agricultural work, with a focus on tasks such as planting, weeding, harvesting, and managing crops after the harvest. Unfortunately, a significant amount of this work goes unrecognized as it is often classified as "unpaid" domestic labor. In rural areas like kurukshetra, smallholder farming is the primary form of agriculture, with women playing a crucial role in ensuring the success of agricultural production. Despite their significant contributions, women frequently lack equal access to resources, recognition, or decision-making authority compared to men.

In rural India, especially in regions with a high concentration of agriculture, women play a significant role in managing crop production, tending to livestock, and processing agricultural products. In Haryana, the majority of rural women engage in work on family-owned farms, carrying out both domestic and agricultural responsibilities. Wheat, rice, and sugarcane are the main crops cultivated by women in kurukshetra, a district famous for its exceptional agricultural output. While women often lend a hand to men in activities like planting, watering,

weeding, and harvesting, their contributions are often overlooked in official agricultural records. This invisibility is further intensified by societal norms that assign lesser worth to women's labor compared to men's, both in terms of the financial compensation they receive and their acknowledgment as primary agricultural workers.

Despite their often overlooked accomplishments, women continue to play a vital role in India's agricultural sector. In addition to their regular farming duties, women in kurukshetra also have a crucial role in making decisions regarding the well-being of livestock and dairy production, which are essential for the economic security of numerous rural families. In Haryana, women have a significant presence in the dairy sector, with an increasing number of rural women venturing into dairy farming as an additional source of income. According to the national dairy development board, Haryana contributes approximately 6% to India's total milk production, with women primarily engaged in tasks like milking cows, processing dairy products, and overseeing livestock health. Despite this, women's contribution to dairy farming is often overlooked in national policies and statistics, and the value of their work is often incorporated into the household economy without being recognized or compensated separately.

In kurukshetra, women also have a significant role in post-harvest activities such as sorting, threshing, cleaning, and storing crops. Due to their classification as part of women's household responsibilities, these labor-intensive and physically demanding tasks are often overlooked as formal economic activity. Despite the significant role women play in ensuring that crops are properly processed and stored, which directly affects the household's food security and financial stability, the undervaluation of these activities often results in them not receiving fair compensation for the work they do. Additionally, while often excluded from the formal aspects of agricultural marketing systems, women also contribute to the selling of agricultural products.

The statistical information regarding women's participation in agricultural work, specifically in Haryana, provides a clear picture of their significant contribution. The economic survey of haryana (2022-23) reveals that women make up approximately 35% of the total agricultural labor force in the state, but their involvement goes beyond this percentage. Women play a crucial role in crop production, with a significant contribution to cultivating essential food crops such as wheat and rice, as well as valuable cash crops like sugarcane. Despite the magnitude of their work, women in agriculture encounter systemic obstacles, particularly in relation to land ownership. In Haryana, as in many other states in India, the ownership of agricultural land is predominantly held by male family members, and women rarely have legal

rights to the land they cultivate. The absence of land ownership limits women's access to resources, such as credit, which can impede their capacity to invest in and grow their agricultural endeavors.

The lack of equal ownership and control of land by women is a major obstacle to their economic empowerment in the agricultural sector. According to the 2011 agriculture census, women hold only 13% of the operational landholdings in India, with the majority of agricultural land being controlled by men. In Haryana, this statistic is even more pronounced, as land ownership remains predominantly male, with inheritance practices favoring male heirs. The unequal distribution of land ownership is connected to deeper societal issues, including patriarchal inheritance practices, which limit women's ability to have complete authority over the land they cultivate. Consequently, women in agriculture in kurukshetra frequently find themselves in subordinate positions, where their work is underappreciated, and their access to economic prospects is restricted.

Alongside the challenges of property ownership, women in agriculture face significant hurdles when attempting to secure credit and financial support. Because they often have limited access to official financial institutions, rural women are less able to purchase seeds and fertiliser, adopt modern farming techniques, and ensure the long-term viability of their agricultural activities. Government programs like the kisan credit card (kcc) scheme and the pradhan mantri fasal bima yojana (pmfby) were created to help farmers, but women still have trouble obtaining these programs because they lack financial literacy, land ownership, and documentation. According to the nabard all india rural financial inclusion survey (2016), only 10% of rural women in india have access to institutional credit for agricultural purposes, while 35% of men have the same access. The unequal distribution of financial resources exacerbates the difficulties encountered by women in the agricultural sector.

Despite the obstacles that hinder women's full involvement and advantages in agriculture, there have been encouraging advancements in acknowledging and addressing their contributions to the sector. In recent years, government initiatives and regulations have shifted their attention towards enhancing the economic independence of rural women. The national rural livelihoods mission (nrlm), for instance, has been highly effective in establishing self-help groups (shgs) in rural India, providing women with access to credit, training, and capacity-building opportunities. These shgs have also served as a space for women to gather and discuss topics such as farming, land ownership, and access to resources. In kurukshetra, shgs have played a

significant role in empowering women, enabling them to enhance their agricultural output, strengthen their position in local markets, and gain greater control over household finances.

Women's participation in agricultural decision-making is an important area that still requires progress. In numerous rural households, men continue to hold the primary responsibility for making decisions related to agriculture, including choosing crops and managing finances. Consequently, women's contributions to agricultural planning are frequently disregarded, even though they possess extensive knowledge of farming techniques and the difficulties encountered by farming households. Promoting women's involvement in decision-making processes can greatly enhance agricultural productivity and household income, as women's insights on resource management, crop diversification, and risk management can result in more sustainable and efficient farming methods.

Despite their significant contributions to Indian agriculture, women are often overlooked, undervalued, and underpaid. Due to the societal perception that it is an extension of their domestic responsibilities, women's work in agriculture often goes unnoticed, and they have limited access to resources and decision-making power. Women's contributions are crucial for agricultural productivity and the financial stability of rural households in regions like kurukshetra, where agriculture is the primary source of income. Enhancing women's economic empowerment and livelihoods necessitates tackling the structural barriers that hinder their participation in agriculture, including land ownership, access to loans, and decision-making power. Creating a more inclusive, fair, and environmentally friendly agricultural sector in India necessitates recognizing and valuing the contributions made by women to the field. As India's agricultural sector undergoes transformation, it is imperative that the perspectives and contributions of women are recognized and incorporated into policies and initiatives designed to enhance rural livelihoods.

To further understand the depth of women's contributions to agriculture and the importance of addressing their marginalization within this sector, it is necessary to draw on more recent reports and statistics that shed light on the current state of women's participation in agriculture, their challenges, and potential solutions. Reports from the Ministry, research studies, and national surveys offer valuable insights that highlight the crucial role of women in the agricultural sector. According to the ministry of agriculture and farmers' welfare's "agriculture census 2015-16," women comprise approximately 28.2% of the total agricultural workforce in india, yet this figure is often misleading as it fails to account for women's extensive

involvement in unpaid and informal agricultural work. The agriculture census fails to include women who do not own land, thereby overlooking their significant contributions to the agricultural sector. When taking into account the actual participation of women in agricultural work, the number is considerably higher, with estimates indicating that women contribute to more than 60% of total agricultural labor in rural India. This significant contribution encompasses both crop cultivation and livestock management, with women actively participating alongside men in various rural areas, such as haryana, to guarantee food security and the financial stability of farming households.

Understanding the significant role women play in ensuring food security is essential in acknowledging their contributions to the agricultural sector. In countries like India, women play a significant role in food production, as highlighted in a report from the Food and Agriculture Organization of the United Nations (fao) in 2011, titled "the role of women in agriculture." In rural India, women engage in the cultivation of food crops, maintain home gardens, and play a crucial role in food storage and preservation. Since women are responsible for ensuring the family has enough food and managing food resources efficiently, their work significantly influences household food security. Unfortunately, women's contributions to food security are frequently overlooked in national statistics, resulting in an inaccurate portrayal of their significance in supporting rural economies and combating problems like hunger and malnutrition.

In Haryana, women's participation in dairy farming serves as a prime illustration of their indispensable contribution to the agricultural sector. Dairy farming holds significant importance in the state's agricultural sector, and it is primarily managed by women. Women in rural haryana are responsible for milking cows, managing dairy herds, and processing milk into products such as butter, ghee, and yogurt. According to the national dairy development board (nddb), women contribute to more than 70% of the labor involved in dairy production in haryana. However, despite their essential role in the dairy sector, women's contributions are often not reflected in official economic indicators, and they face significant challenges related to access to credit, veterinary services, and market linkages. These obstacles hinder women from fully utilizing their abilities in dairy farming and enhancing their financial well-being.

In the realm of women's agricultural livelihoods, owning land is a crucial factor that greatly influences their economic empowerment. As mentioned earlier, the 2011 census revealed that women hold only about 13% of operational landholdings in india, with this figure being even

lower in haryana. This gender gap in land ownership is particularly alarming, as land is the primary asset that determines access to resources, financial support, and decision-making power within agricultural families. Women in kurukshetra, like many rural women across india, often work on land that is legally owned by male family members, which severely limits their ability to control agricultural production and to access government benefits, such as subsidies and loans. Although the government has introduced policies like the "national policy for farmers," which recognizes the need to ensure gender equality in agriculture, the implementation of these policies has been slow and often lacks the necessary support structures to address the specific needs of women farmers.

A significant policy initiative aimed at empowering women in agriculture is the "national rural livelihoods mission" (nrlm), launched by the ministry of rural development in 2011. The nrlm aims to empower women by improving their access to financial resources, providing training and skill development programs, and facilitating connections with potential buyers and suppliers. The nrlm has created a network of self-help groups (shgs) that allows women to pool resources, gain financial independence, and acquire skills that can enhance their agricultural productivity. In Haryana, shgs have empowered women to obtain loans and assistance for agricultural activities, including vegetable cultivation, poultry farming, and dairy production. These shgs have served as a platform for women to exchange knowledge, engage in discussions about farming methods, and explore avenues to enhance their income. However, despite the success of these initiatives, the overall impact on women's empowerment in agriculture remains limited by persistent social norms, lack of access to land, and systemic biases that favor male farmers.

Government schemes such as the "pradhan mantri fasal bima yojana" (pmfby), which provides crop insurance to farmers, and the "kisan credit card" (kcc) scheme, aimed at providing short-term loans to farmers, have been instrumental in improving agricultural productivity and providing financial security to farmers. Unfortunately, women encounter numerous obstacles when trying to participate in these programs. According to a study by the "rural development and self-employment training institute" (rudseti), only 10-15% of women in rural india have access to the kcc scheme, compared to 35% of male farmers. The absence of land ownership, proper documentation, and financial knowledge hinders women from reaping the advantages of these schemes. Furthermore, even when women are able to access credit, they often face challenges in ensuring that the loan is used for agricultural purposes, as male family members tend to have greater control over financial decisions.

One of the most comprehensive reports on women in agriculture is the "economic survey of india 2022-23," which provides valuable insights into the role of women in the agricultural sector and their contributions to the rural economy. The report emphasizes that women's involvement in agriculture significantly influences agricultural productivity and food security, as women often contribute unique perspectives and innovative solutions to farming challenges. The survey underscores the importance of expanding women's access to resources like land, credit, and technology in order to enhance agricultural outcomes. It also stresses the importance of women's inclusion in agricultural decision-making processes, as research shows that women farmers are more likely to adopt sustainable farming practices and diversify crops, leading to greater resilience and higher long-term productivity.

Despite the obstacles faced, there are many instances of successful women-led agricultural projects that have showcased the potential for women's empowerment within the industry. For instance, in the state of kerala, women's collectives have successfully engaged in the production and marketing of organic produce, establishing a direct link between small-scale farmers and consumers. These groups have not only boosted women's earnings but also given them more authority in managing agricultural activities and selling their produce. Similar initiatives in haryana, including women-run dairy cooperatives and organic farming groups, have shown promising results in terms of women's economic empowerment and community development.

A comprehensive strategy is needed to tackle the underlying factors contributing to gender inequality in agriculture, in order to pave the way for women's progress in the field. This includes ensuring women's access to land rights, improving their access to financial services, providing gender-sensitive agricultural training, and empowering them to take on leadership roles within farming communities. Policies that promote gender equality in agriculture must be accompanied by targeted interventions that address the specific needs of women farmers, particularly those in regions like kurukshetra, where agriculture remains the cornerstone of rural livelihoods. By recognizing and supporting women's contributions to agriculture, india can unlock the full potential of its agricultural sector and ensure that rural women play a central role in shaping the country's agricultural future.

1.1.3 Regional Significance of Agriculture in Haryana: A Focus on Kurukshetra:

The importance of agriculture in haryana, especially in the kurukshetra district, is a crucial factor in comprehending the socio-economic landscape of the region. Haryana has gained recognition as one of India's most agriculturally productive states, playing a crucial role in feeding the nation. As of 2021, haryana contributed around 11% of India's total wheat production, even though it only covered about 1.4% of the country's land area. This exceptional productivity is attributed to various factors, such as favorable weather patterns, nutrient-rich alluvial soil, and the extensive utilization of irrigation systems. The green revolution, which commenced in the 1960s, revolutionized haryana's agricultural sector, introducing advanced crop varieties, chemical fertilizers, and contemporary farming methods. This shift has not only boosted agricultural production but has also had a profound impact on the socio-economic landscape of rural areas, especially in kurukshetra.

Kurukshetra, renowned for its historical and cultural importance, is also a crucial agricultural center in the state of Haryana. The district covers a net sown area of around 1.5 million hectares, with wheat and rice being the main crops cultivated. As per the haryana economic survey 2020-21, wheat is cultivated on around 1.1 million hectares, while rice is grown on approximately 0.3 million hectares. The agricultural output in kurukshetra is further bolstered by the extensive canal irrigation system, which ensures a consistent supply of water for farming activities. The haryana irrigation department has reported that approximately 80% of the cultivated land in kurukshetra is irrigated, greatly reducing the reliance on monsoon rains and guaranteeing a stable crop production. The irrigation infrastructure has played a crucial role in turning kurukshetra into a significant agricultural hub, ensuring food security and bolstering the economic well-being of the area.

The socio-economic impact of agriculture in kurukshetra is significant, especially in terms of employment and livelihoods. Agriculture plays a crucial role in providing employment opportunities, with around 60% of the workforce directly involved in agricultural activities. The significance of agriculture in providing livelihoods and supporting rural economies is underscored by its heavy reliance on the sector. Despite their significant contributions, the role of women in agriculture, especially in kurukshetra, is frequently disregarded. Women play an active role in different agricultural activities, such as planting seeds, removing weeds, gathering crops, and processing them after harvest. The national sample survey office (nsso) reports that women make up approximately 33% of the agricultural workforce in India, and this percentage

is also seen in the state of haryana. In kurukshetra, women play a vital role in ensuring the success of agricultural operations, yet their contributions are often overlooked and underreported.

Despite their substantial contributions, women in agriculture encounter various obstacles that impede their ability to sustain their livelihoods. One of the most urgent problems is the limited availability of land ownership. Due to legal restrictions, women frequently lack ownership rights to the land they cultivate, which hinders their capacity to make choices concerning agricultural practices and resource allocation. According to the 2011 census, only around 13% of Indian women own land, while a staggering 87% of men do. This difference is especially noticeable in Haryana, where traditional patriarchal norms often determine who owns and controls the land. As a result, women farmers are often left out of important discussions and decisions regarding agricultural production, which hinders their capacity to enhance their economic well-being and improve their living conditions. The absence of land ownership limits women's access to credit, as financial institutions typically require land as collateral for loans.

The government's agricultural policies and programs have a significant impact on the agricultural landscape in haryana. The state government has implemented several programs to boost agricultural output and provide assistance to farmers, with a particular focus on women farmers. The mahatma gandhi national rural employment guarantee act (mgnrega) has played a crucial role in creating job opportunities in rural regions, although women frequently encounter obstacles in accessing these opportunities due to societal norms and discrimination. Recent reports suggest that women make up only about 30% of the beneficiaries under mgnrega, underscoring the necessity for policies that specifically target and address the unique challenges faced by women in the agricultural sector. Additionally, the haryana government has introduced schemes like the "beti bachao beti padhao" initiative, which seeks to promote gender equality and empower women, including those involved in agriculture.

Self-help groups (shgs) have become an essential tool for encouraging women's involvement in agricultural work and improving their overall well-being. In Haryana, SHGs have played a crucial role in empowering women by offering them access to financial resources, training opportunities, and collective bargaining capabilities. According to the national rural livelihoods mission (nrlm), more than 7 million women are involved in self-help groups (shgs) across the country, with many actively engaged in agricultural activities and food processing. The positive impact of shgs on women's livelihoods can be attributed to their capacity to foster unity, boost

self-assurance, and offer a platform for skill enhancement. In kurukshetra, shgs have played a crucial role in empowering women by providing them with access to resources and information, allowing them to embrace modern agricultural techniques and enhance their productivity.

The incorporation of technology in farming is a crucial factor that impacts the regional importance of agriculture in haryana. The state has made substantial progress in embracing contemporary agricultural methods and technologies, resulting in enhanced productivity and efficiency. The digital India initiative seeks to close the digital gap and offer farmers, including women, access to information and resources. Mobile apps and online platforms can make it easier to access market information, weather forecasts, and agricultural best practices. Nevertheless, the gender digital divide persists as women face restricted access to smartphones and the internet. According to the internet and mobile association of india (iamai), only 29% of women in rural areas have access to the internet, while 54% of men do. Filling this gap is crucial to guarantee that women can fully reap the advantages of technological progress in the agricultural sector.

Additionally, the influence of climate change on farming in kurukshetra should not be disregarded. Variations in weather patterns, a rise in the occurrence of extreme weather events, and alterations in climatic conditions present substantial obstacles to agricultural productivity. Women farmers, in particular, bear the brunt of these changes, as their livelihoods depend on traditional farming methods that may not be able to withstand the impacts of climate variability. The haryana government has launched several initiatives to encourage climate-resilient farming methods, such as the cultivation of drought-tolerant crops and the implementation of sustainable agricultural practices. These initiatives are vital for guaranteeing the long-term viability of agriculture in kurukshetra and improving the economic well-being of women farmers.

The importance of education and skill development in improving women's livelihoods in agriculture cannot be overstated. Having access to educational and training opportunities can equip women with the knowledge and skills needed to enhance their agricultural techniques and boost their earnings. Numerous non-governmental organizations and government programs in Haryana concentrate on offering training to women in fields like organic farming, adding value to agricultural products, and promoting their marketing. These initiatives not only

improve women's abilities but also encourage their involvement in decision-making processes concerning agricultural production and resource management.

Additionally, the market conditions for agricultural goods in kurukshetra have a significant impact on the economic well-being of women farmers. Having fair and accessible markets is crucial for guaranteeing that women can sell their agricultural products at reasonable prices. Unfortunately, women encounter obstacles in accessing markets because they lack information, face difficulties with transportation, and are constrained by societal norms that restrict their movement. Efforts focused on establishing women-centered market platforms and cooperatives can effectively tackle these obstacles, granting women improved access to markets and bolstering their economic empowerment. The importance of agriculture in Haryana, particularly in the region of Kurukshetra, is closely linked to the socio-economic circumstances of women working in the agricultural industry. Despite its significance in providing livelihoods, agriculture presents numerous challenges for women, necessitating specific measures to address their unique needs. Tackling concerns like land ownership, credit availability, involvement in agricultural policies, and the incorporation of technology is crucial for improving women's economic opportunities in the agricultural sector. By creating an inclusive agricultural environment that acknowledges and appreciates the contributions of women, haryana can promote sustainable agricultural development and enhance the socio-economic well-being of its rural population.

1.2 Understanding the Sociological Relevance of Women's Livelihoods:

1.2.1 Gender Dynamics in Rural Agrarian Societies:

The gender dynamics in rural agrarian societies, especially in haryana and the kurukshetra district, are crucial in comprehending the socio-economic disparities that influence the lives of women involved in agriculture. These dynamics have a substantial impact on women's involvement, contribution, and advantages in agricultural work. Despite women's significant participation in the sector, they encounter systemic obstacles that hinder their role and restrict their access to resources, decision-making authority, and economic benefits. This has wider implications for rural development and poverty reduction, where gender disparities in agriculture persist.

Agriculture serves as the foundation of rural economies in India, and in Haryana, it holds the same significance. According to the haryana economic survey (2023-24), agriculture continues

to be a vital sector for the majority of rural households, accounting for around 75% of the rural population's livelihood. This encompasses both agricultural production and animal husbandry. Women play a crucial role in this industry, engaging in various tasks such as planting, weeding, picking, and processing crops after they have been harvested. Despite the substantial impact of women in the agricultural sector, their contributions are frequently overlooked and undervalued in official agricultural data.

Additionally, the socio-economic challenges faced by women in agriculture are further exacerbated by their restricted access to education and training opportunities. The national family health survey (nfhs-5) reveals that women residing in rural areas have lower literacy rates than men, with only 60% of women being literate, while 80% of men possess literacy skills. The lack of educational opportunities limits women's access to knowledge about contemporary farming techniques, market dynamics, and technological innovations. The absence of education hinders women's involvement in agricultural extension services, which are vital for improving productivity and income. The ministry of agriculture and farmers' welfare revealed that only 12% of female farmers have access to agricultural extension services, while 25% of male farmers do. The significant difference in the number of women in leadership positions emphasizes the pressing requirement for focused initiatives that equip women with education and skills to enhance their professional growth.

In haryana, especially in the rural regions of kurukshetra, women make up approximately 60-65% of the agricultural workforce. According to the Ministry of Agriculture and Farmers' Welfare (2023), around 80% of rural women in Haryana are engaged in crop production, while 85% are involved in livestock management activities. Nevertheless, it is crucial to acknowledge that the contributions of women in agriculture, which are vital for productivity, are frequently overlooked in formal economic analyses. Women are typically responsible for activities like weeding, transplanting, water management, and post-harvest work, which are sometimes seen as less important than tasks traditionally associated with men, such as land ownership and market-oriented crop production.

In Haryana, the traditional system of land ownership and inheritance plays a crucial role in shaping gender dynamics within rural agriculture. According to the 2023 report by the national commission for women, women in India, including in Haryana, own only about 13% of the total agricultural land. In haryana, women hold less than 10% of agricultural land, which is a significantly lower percentage compared to other states. The cultural norms that dictate land

inheritance and property rights in the area lead to a strong gender bias, where land is primarily inherited by male heirs, leaving women with limited or no control over agricultural assets. The absence of control over land restricts women from fully reaping the benefits of agricultural income and accessing resources such as loans, agricultural subsidies, and government schemes, which are often contingent on land ownership.

Additionally, women in rural haryana face restricted access to formal credit and financial resources. According to a 2023 report by nabard, only about 12-15% of rural women in haryana have access to institutional credit for agricultural purposes, while 30% of male farmers have access to such credit. The restricted access to credit prevents women from investing in essential agricultural resources like seeds, fertilizers, and equipment, limiting their potential to expand their farming activities or pursue more lucrative endeavors. Many women turn to informal lending systems, which are known for their high interest rates and exploitative practices. Consequently, women in agriculture are unable to fully utilize the capabilities of their land or labor due to a lack of financial independence.

The division of labor based on gender is a crucial aspect that influences women's involvement in agriculture in kurukshetra. Men typically control more visible, higher-value activities such as large-scale crop production, marketing, and sales, while women are relegated to less visible tasks such as care work, weeding, milking, and processing. The haryana state agricultural marketing board (hsamb) emphasizes the significance of women's involvement in dairy farming, as they play a crucial role in feeding, milking, and processing dairy products. Despite making a significant contribution, women rarely engage in formal dairy cooperatives or are involved in marketing and distribution networks, which restricts their potential to earn higher profits from dairy farming.

A 2023 study by the indian council of agricultural research (icar) revealed that while 60% of women in rural haryana are involved in dairy farming, less than 10% of them have direct access to dairy markets or cooperatives. Due to their exclusion from formal markets, rural women in kurukshetra frequently sell milk at lower prices or through informal channels, which diminishes their earnings and restricts their economic independence. Additionally, women are often excluded from participating in decision-making processes within these agricultural cooperatives, which perpetuates gender disparities in the agricultural industry.

Alongside labor and land concerns, the availability of agricultural extension services plays a crucial role in shaping gender dynamics within haryana's agricultural sector. Extension services

offer farmers crucial knowledge about innovative farming methods, climate-conscious agriculture, effective pest control, and market insights. Unfortunately, women living in rural areas encounter numerous obstacles when trying to access these essential services. The ministry of agriculture's 2023 report reveals that only a small fraction, less than 15%, of agricultural extension services in Haryana are tailored towards women. Additionally, women's involvement in agricultural training programs is significantly low. Despite the Haryana state agricultural department's efforts to implement women-focused initiatives like farm schools and self-help groups, the extent of their reach and influence remains restricted. In numerous instances, women residing in rural areas of Kurukshetra are oblivious to these opportunities due to social and cultural obstacles, including restricted mobility, limited access to education, and deeply ingrained gender norms.

A significant factor in gender dynamics within Kurukshetra's agricultural sector is the unequal access to technology. Technological progress is crucial in enhancing agricultural productivity and ensuring long-term sustainability. Unfortunately, rural women in Haryana frequently face challenges in accessing modern agricultural equipment and machinery. According to the 2023 report by the ministry of rural development, women farmers face challenges in accessing tractors, irrigation equipment, and mechanized tools that are typically utilized in large-scale farming operations. The utilization of these technologies is often led by male farmers, which limits women's capacity to enhance their productivity and earnings. While government initiatives like the Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) aim to improve access to irrigation and water management technologies, these programs often fail to reach rural women who do not own land or have control over agricultural assets.

The significance of education and awareness in empowering rural women is a crucial aspect to consider when examining gender dynamics in agriculture. The 2023 Haryana state literacy report reveals that the literacy rates among women in rural areas of the state are lower than those of men, with a difference of around 15%. The difference in educational attainment between men and women restricts women's access to knowledge about agricultural advancements, government initiatives, and market prospects. Additionally, rural women frequently lack the necessary skills to engage in more lucrative agricultural activities, such as organic farming, agro-processing, and marketing. Although there has been some advancement

in recent years, the number of women participating in agricultural training programs has still not reached its full potential. The haryana rural development authority (hrda) reported that the number of women enrolled in agriculture-related skill development programs grew by 25% in 2023, signalling a positive trend toward empowering women farmers with the knowledge and skills necessary to succeed in agriculture.

Despite efforts to promote gender equality, patriarchal social structures and norms still pose challenges that hinder women's full participation and benefits from agricultural development programs. In rural haryana, cultural norms frequently position women as the focal point of household responsibilities and domestic chores, leaving them with minimal time and energy to participate in income-generating agricultural endeavors. A study conducted by the haryana state women's commission in 2023 found that over 70% of rural women in kurukshetra reported being overburdened with domestic chores, which severely curtailed their ability to participate in community-based agricultural initiatives or take on leadership roles in the agricultural sector. The combined responsibilities of agricultural work and household chores restrict women's chances to acquire new skills, start businesses, and achieve economic progress.

In recent years, the Indian government has acknowledged the importance of implementing gender-sensitive policies in the agricultural sector. The upcoming update to the national policy for farmers highlights the significance of involving women in agricultural decision-making and ensuring their access to land, credit, and technology. Additionally, the pradhan mantri fasal bima yojana (pmfby) and the national rural livelihood mission (nrlm) have been instrumental in providing financial and technical support to women farmers. These initiatives have enabled women in rural haryana to obtain loans, subsidies, and crop insurance, thereby granting them a level of financial stability and adaptability. Unfortunately, the full implementation of these policies has been sluggish, and women still encounter obstacles in accessing these resources due to their limited land ownership, education, and knowledge.

The gender dynamics in rural agrarian societies, particularly in kurukshetra, reflect a complex intersection of cultural, economic, and social factors that limit women's ability to access resources and benefit from agricultural development. Despite their crucial role in agriculture, rural women encounter numerous obstacles in terms of land ownership, access to credit, decision-making authority, and involvement in formal markets. The unequal distribution of labor and the influence of patriarchal social structures hinder women's economic empowerment and contribute to the persistence of gender disparities. Nevertheless, there are emerging

possibilities for change, especially through gender-sensitive policies, skill development programs, and financial support schemes designed to empower rural women. To achieve sustainable agricultural development and improve the livelihoods of women in agriculture, it is essential to address the structural barriers that limit women's participation in the sector and to ensure that women have equal access to resources, opportunities, and decision-making power.

1.2.2 Socio-Economic Implications of Women's Participation in Agricultural Activities:

The socio-economic implications of women's participation in agricultural activities are vast and multifaceted, shaping the development of rural economies and addressing gender inequalities in agrarian societies. Women play a crucial role in the agricultural sector, contributing significantly to food security, household income, and rural community development. In India, the agricultural sector remains a primary source of livelihood for nearly 55% of the population, as reported by the Ministry of Agriculture and Farmers' Welfare in 2023. Within this framework, women account for approximately 42% of the agricultural labor force nationwide. In Haryana, where agriculture is a cornerstone of the economy, women's participation in agricultural activities is indispensable, particularly in rural districts such as Kurukshetra.

The participation of women in agriculture has critical socio-economic implications for rural households. Women's contributions span across various agricultural tasks, including sowing, weeding, harvesting, post-harvest processing, and livestock management. According to the National Sample Survey Office (NSSO) 2023 report, rural women in Haryana contribute nearly 60% of the total labor hours spent on agricultural production, highlighting their pivotal role in ensuring the productivity and sustainability of farming systems. Despite this significant involvement, women in rural Haryana face systemic barriers, including limited access to land ownership, credit, and market opportunities, which hinder their ability to achieve socio-economic empowerment.

Land ownership is a crucial determinant of socio-economic status in agrarian societies, yet it remains highly gendered in its distribution. As per the 2023 report by the Ministry of Rural Development, only 13% of landholdings in India are registered under women's names. In Haryana, this figure is even lower, with women owning just 9% of agricultural land. This disparity is rooted in cultural norms and inheritance practices that favor male heirs, effectively

marginalizing women in terms of asset ownership and decision-making power. The lack of land ownership not only limits women's economic autonomy but also excludes them from accessing institutional credit, government subsidies, and agricultural extension services, which are often tied to landholding status.

The implications of women's participation in agriculture extend to the financial resilience and food security of rural households. Studies conducted by the National Bank for Agriculture and Rural Development (NABARD) in 2023 revealed that households where women actively participate in agricultural activities tend to have higher levels of food security and diversified income sources. Women's engagement in crop cultivation, livestock rearing, and allied activities such as dairy farming and poultry contributes significantly to household incomes. For instance, in Kurukshetra district, dairy farming is a major source of livelihood for rural women, with approximately 70% of women involved in feeding, milking, and processing dairy products. Despite this, women's participation in formal dairy cooperatives remains low, with less than 12% of women in Haryana having membership in such organizations, as highlighted in a 2024 report by the Haryana State Cooperative Federation.

The socio-economic benefits of women's participation in agriculture are closely linked to their access to credit and financial resources. Access to credit allows women to invest in high-quality seeds, fertilizers, irrigation, and modern farming equipment, thereby improving agricultural productivity. However, the 2023 All India Financial Inclusion Survey found that only 14% of women in rural Haryana have access to institutional credit for agricultural purposes. The majority of women rely on informal lending sources, which often come with exorbitant interest rates and exploitative terms. This lack of financial inclusion reinforces the cycle of poverty and limits women's ability to expand their agricultural enterprises or invest in sustainable farming practices.

The gendered division of labor in agriculture also has profound socio-economic implications. In rural Haryana, men tend to dominate high-value and mechanized agricultural activities, while women are relegated to labor-intensive and time-consuming tasks such as transplanting, weeding, and post-harvest work. According to the International Labour Organization (ILO) 2023 report, rural women in India spend an average of 8-10 hours daily on agricultural and domestic work, leaving them with little time for skill development or entrepreneurship. This dual burden of agricultural labor and unpaid care work exacerbates gender inequalities and undermines women's potential to contribute fully to the rural economy.

The socio-economic implications of women's participation in agriculture are further influenced by their access to agricultural extension services and training programs. Agricultural extension services play a critical role in disseminating knowledge about modern farming techniques, pest management, and climate-resilient practices. However, rural women in Haryana face significant barriers in accessing these services due to cultural norms, limited mobility, and lower levels of education. The 2023 report by the Indian Council of Agricultural Research (ICAR) highlighted that only 18% of women farmers in Haryana have attended agricultural training programs or received extension services, compared to 48% of male farmers. This disparity limits women's ability to adopt innovative practices and improve their agricultural productivity.

Despite these challenges, there have been notable initiatives aimed at enhancing the socio-economic status of women in agriculture. The Mahila Kisan Sashaktikaran Pariyojana (MKSP), launched under the National Rural Livelihood Mission (NRLM), has been instrumental in empowering women farmers through capacity-building, skill development, and financial support. As of 2023, over 1.2 million women across India, including in Haryana, have benefited from the MKSP program. Similarly, the Haryana State Rural Livelihoods Mission (HSRLM) has promoted self-help groups (SHGs) to encourage women's participation in income-generating activities and provide them with access to credit and market linkages.

The socio-economic implications of women's participation in agriculture also extend to the broader development goals of rural communities. Women's involvement in agriculture contributes to poverty alleviation, gender equality, and sustainable development. According to a 2023 United Nations Development Programme (UNDP) report, increasing women's access to resources and decision-making power in agriculture can boost farm productivity by 20-30%, leading to significant improvements in rural livelihoods and food security. In Kurukshetra, initiatives such as women-led organic farming collectives and agro-processing units have demonstrated the transformative potential of women's empowerment in agriculture.

The socio-economic implications of women's participation in agricultural activities are both profound and far-reaching. Women's contributions to agriculture enhance household incomes, food security, and community development, yet systemic barriers such as limited land ownership, access to credit, and gendered labor divisions continue to undermine their potential. Addressing these challenges requires a multi-faceted approach that includes gender-sensitive policies, capacity-building programs, and increased investment in women-centric agricultural

initiatives. Empowering women in agriculture is not only a matter of social justice but also a strategic imperative for achieving sustainable rural development and economic growth in Haryana and beyond. By recognizing and addressing the socio-economic dimensions of women's participation in agriculture, policymakers and stakeholders can create an enabling environment that supports the livelihoods and well-being of rural women, thereby contributing to the overall development of rural India.

The socio-economic implications of women's participation in agricultural activities are profound and multifaceted, particularly in rural agrarian societies like Kurukshetra district in Haryana. Women play a crucial role in agricultural production, contributing significantly to food security and the overall economy. However, their contributions are often undervalued and overlooked in policy discussions, leading to systemic inequalities that hinder their potential. As of 2021, women constituted approximately 33% of the agricultural labor force in India, yet their roles are frequently confined to informal and unrecognized labor. This situation is exacerbated by cultural norms and socio-economic barriers that limit women's access to resources, education, and decision-making processes.

In Haryana, the agricultural landscape is characterized by a patriarchal structure that influences gender dynamics within rural communities. Traditional gender roles often dictate that men are the primary decision-makers regarding agricultural practices, land use, and financial matters. This gendered division of labor is evident in the tasks assigned to men and women. While men typically engage in plowing, sowing, and managing finances, women are often relegated to tasks such as weeding, harvesting, and post-harvest processing. According to the National Sample Survey Office (NSSO), women contribute significantly to agricultural labor, yet their work is frequently undervalued and unrecognized. In Kurukshetra, women play a crucial role in ensuring food security and sustaining agricultural productivity, yet their contributions are often overlooked in policy discussions and agricultural planning.

The lack of access to land ownership is a critical issue that exacerbates gender disparities in rural agrarian societies. In Haryana, only about 13% of women own land, compared to 87% of men, according to the 2011 Census. This disparity in land ownership not only limits women's ability to make independent decisions regarding agricultural production but also restricts their access to credit and financial resources. Land ownership is often a prerequisite for obtaining loans from financial institutions, and without it, women farmers face significant challenges in securing the necessary capital to invest in their agricultural activities. The absence of legal

rights to land further entrenches women's economic vulnerability, making it difficult for them to improve their livelihoods and escape the cycle of poverty.

Moreover, the socio-economic challenges faced by women in agriculture are compounded by their limited access to education and training. The National Family Health Survey (NFHS-5) indicates that women in rural areas have lower literacy rates compared to men, with only 60% of women being literate compared to 80% of men. This educational gap restricts women's ability to access information about modern agricultural practices, market trends, and technological advancements. The lack of education also limits women's participation in agricultural extension services, which are crucial for enhancing productivity and income. According to the Ministry of Agriculture and Farmers' Welfare, only 12% of women farmers have access to agricultural extension services, compared to 25% of men. This disparity highlights the urgent need for targeted interventions to empower women through education and skill development.

The role of Self-Help Groups (SHGs) has emerged as a significant factor in addressing gender dynamics in rural agrarian societies. SHGs provide women with a platform to come together, share resources, and access credit. In Haryana, SHGs have been instrumental in promoting women's participation in agriculture and enhancing their livelihoods. According to the National Rural Livelihoods Mission (NRLM), over 7 million women are part of SHGs across the country, with many engaged in agricultural production and processing. These groups not only facilitate access to financial resources but also foster a sense of community and solidarity among women. By pooling their resources and knowledge, women in SHGs can collectively negotiate better prices for their produce, access markets, and improve their economic status.

The integration of technology in agriculture is another critical aspect that influences gender dynamics in rural agrarian societies. The Digital India initiative aims to bridge the digital divide and provide farmers, including women, with access to information and resources. Mobile applications and online platforms can facilitate access to market information, weather forecasts, and agricultural best practices. However, the gender digital divide remains a challenge, with women having limited access to smartphones and the internet. According to the Internet and Mobile Association of India (IAMAI), only 29% of women in rural areas have access to the internet, compared to 54% of men. This disparity in access to technology further exacerbates existing gender inequalities, as women are often unable to leverage technological advancements to enhance their agricultural productivity and income.

The impact of climate change on agriculture also has significant implications for gender dynamics in rural agrarian societies. Women, who are often responsible for managing household food supplies, are disproportionately affected by the adverse effects of climate change, such as droughts, floods, and changing weather patterns. The Ministry of Earth Sciences has reported that India is experiencing an increase in extreme weather events, which pose significant challenges to agricultural productivity. Women, who typically have less access to resources and information, are often less equipped to adapt to these changes. The National Adaptation Fund for Climate Change (NAFCC) has recognized the need for gender-sensitive approaches in climate adaptation strategies, emphasizing the importance of involving women in decision-making processes related to agricultural practices and resource management. By integrating women's perspectives and knowledge into climate adaptation initiatives, it is possible to enhance resilience and improve agricultural outcomes in rural communities.

Furthermore, the socio-economic implications of women's participation in agricultural activities extend beyond individual livelihoods to encompass broader community development. When women are empowered to engage in agriculture, they contribute to enhanced food security, improved nutrition, and increased household income. Studies have shown that when women control income, they are more likely to invest in their children's education and health, leading to intergenerational benefits. According to the Food and Agriculture Organization (FAO), closing the gender gap in agriculture could increase global food production by 2.5 to 4%, significantly contributing to food security and poverty reduction.

In the context of Kurukshetra, the local government and various NGOs have initiated programs aimed at promoting women's participation in agriculture. The Haryana State Rural Livelihoods Mission (HSRLM) has implemented schemes to support women farmers through training, access to credit, and market linkages. These initiatives are crucial for addressing the socio-economic barriers that women face and for fostering an environment where women can thrive as agricultural producers. By providing women with the necessary resources and support, these programs aim to enhance their productivity and economic independence.

Moreover, the role of women in sustainable agricultural practices cannot be overlooked. Women often possess traditional knowledge about local crops, biodiversity, and sustainable farming techniques. Their involvement in agriculture can lead to the adoption of environmentally friendly practices that promote sustainability and resilience in the face of climate change. The Ministry of Agriculture has recognized the importance of integrating women's knowledge into agricultural policies and programs, advocating for gender-responsive approaches that consider the unique challenges and contributions of women in agriculture.

Therefore, the socio-economic implications of women's participation in agricultural activities are significant and multifaceted. Addressing the barriers that women face in accessing resources, education, and decision-making processes is essential for promoting gender equality and enhancing agricultural productivity. The integration of women into agricultural development initiatives not only benefits individual livelihoods but also contributes to broader community development and food security. As we move forward, it is imperative to continue advocating for policies and programs that empower women in agriculture, ensuring that their contributions are recognized and valued in the socio-economic landscape of rural India.

1.3 Statement of Research Problem:

The agricultural sector in India, particularly in Haryana, serves as the backbone of rural livelihoods, with women playing an integral role in sustaining farming and allied activities. Despite their extensive involvement in agricultural labour—ranging from sowing and harvesting to livestock management and post-harvest processing—women often remain undervalued, unrecognized, and marginalized within the agrarian economy. The district of Kurukshetra, renowned for its agricultural productivity, reflects this paradox, where rural women contribute significantly to farming and non-farming activities but continue to face systemic challenges rooted in socio-economic and educational disparities. Limited access to land ownership, institutional credit, agricultural training, and decision-making opportunities further exacerbates the vulnerabilities of women in rural Haryana, leaving their contributions largely invisible in official statistics and policy frameworks. The lack of targeted interventions addressing gendered inequalities in agriculture has stymied the potential for sustainable rural development, perpetuating cycles of poverty and gender disparity.

This research seeks to address these gaps by exploring the socio-economic and educational backgrounds of rural women in Kurukshetra, examining their participation in farming and non-farming activities, and analyzing their contributions to various agricultural operations. By adopting a sociological perspective, the study aims to uncover the structural and cultural factors that shape women's livelihoods in agriculture, while highlighting the untapped potential of empowering women as key agents of rural transformation. Understanding the nuanced dynamics of women's participation in the agrarian economy is critical for formulating policies that not only recognize their contributions but also provide equitable access to resources, opportunities, and decision-making processes, thereby fostering inclusive and sustainable agricultural growth in the region.

1.4 Research Gap:

The role of women in agriculture has been widely studied across India, but a significant gap exists in the understanding of region-specific factors that shape women's livelihoods in agriculture, particularly in districts like Kurukshetra in Haryana. Haryana is a leading agrarian state contributing to India's agricultural output, with over 65% of its population engaged in agriculture and allied activities (Ministry of Agriculture and Farmers' Welfare, 2023). However, within this context, rural women's participation remains undervalued and poorly documented, especially in terms of their socio-economic and educational backgrounds. Despite their substantial contributions to farming operations, women in Haryana own less than 2% of agricultural land due to deep-rooted gender biases in inheritance laws and cultural norms (National Family Health Survey-5, 2020-21). This discrepancy limits their financial autonomy and access to institutional credit, which is vital for improving livelihoods.

Existing research often generalizes women's roles in agriculture without adequately addressing the interplay between gender, caste, and socio-economic status, which is particularly critical in Haryana. In Kurukshetra, for instance, over 70% of rural women participate in agricultural labor, primarily in labor-intensive tasks such as sowing, weeding, and harvesting (Census 2011). Yet, only 18% of these women have access to formal agricultural training or skill development programs (Haryana State Rural Livelihoods Mission, 2023). This lack of skill enhancement opportunities perpetuates the cycle of low-wage, labor-intensive roles, preventing women from transitioning into higher-value agricultural or entrepreneurial activities. Furthermore, while women contribute significantly to the state's dairy sector, which accounts

for 45% of Haryana's agricultural GDP, their roles are often confined to unpaid family labor, with limited recognition in economic and policy frameworks.

Another critical gap lies in the systemic undervaluation of women's agricultural contributions. According to a 2023 report by NITI Aayog, women contribute nearly 60% of the labor in agriculture and allied activities across India, yet their work remains largely invisible in official economic data. In Kurukshetra, women's agricultural labor is predominantly informal, with over 85% of women not receiving formal wages for their contributions (Periodic Labour Force Survey, 2022-23). This invisibility not only marginalizes women economically but also excludes them from accessing government schemes like the Pradhan Mantri Kisan Samman Nidhi (PM-Kisan) and the Deen Dayal Antyodaya Yojana. The lack of gender-disaggregated data further compounds this issue, as it prevents policymakers from designing targeted interventions that address the unique challenges faced by women in the agricultural sector.

Additionally, the dual burden of women's responsibilities in farming and non-farming activities remains underexplored. While rural women in Kurukshetra contribute significantly to both agricultural production and household sustenance, they face persistent time poverty, with over 70% reporting more than 12 hours of daily labor across domestic and agricultural tasks (Time Use Survey, Ministry of Statistics and Programme Implementation, 2023). This dual burden not only affects their physical and mental well-being but also limits their participation in community decision-making and leadership roles. Furthermore, the socio-cultural constraints and traditional gender roles in Haryana's patriarchal society often discourage women from pursuing entrepreneurial opportunities or engaging with formal market structures, thereby stifling their potential for economic independence and empowerment.

Despite various national and state-level initiatives aimed at empowering rural women, such as the Mahila Kisan Sashaktikaran Pariyojana (MKSP) and Haryana's Women Economic Empowerment Scheme, their impact at the micro-level in districts like Kurukshetra remains insufficiently examined. This creates a critical gap in understanding how these programs address—or fail to address—the lived realities of rural women in agriculture. Addressing these gaps is essential for developing evidence-based, gender-sensitive policies that not only recognize women's contributions but also empower them as active stakeholders in Haryana's agrarian economy. This study seeks to bridge these gaps by providing a detailed, region-specific analysis of women's livelihoods in agriculture in Kurukshetra, contributing to the broader discourse on gender equity and sustainable rural development.

1.5 Objectives of the Study:

1. To explore the existing livelihoods of rural women in Kurukshetra district, Haryana, based on their socio-economic and educational backgrounds.
2. To study the participation of women in both farming and non-farming activities within Kurukshetra district.
3. To examine the contributions of women engaged in various agricultural activities in Kurukshetra district, Haryana.

1.6 Research Questions:

1. How do socio-economic and educational backgrounds affect rural women's livelihood opportunities in Kurukshetra district?
2. What roles do women play in farming and non-farming activities, and how do these impact their socio-economic well-being?
3. How are women's contributions to agriculture in Kurukshetra valued economically, socially, and in policy frameworks?

1.7 Scope of Study:

The examination of women's work in agriculture, specifically in the kurukshetra district of haryana, presents a vast opportunity to delve into the diverse and significant contributions that women make to agricultural economies and rural livelihoods. Haryana, a prominent agricultural state in India, plays a crucial role in ensuring the nation's food security by cultivating staple crops like wheat, rice, and sugarcane. Women, who form nearly 42% of the total agricultural labor force in haryana (periodic labour force survey, 2022-23), play an indispensable role in various stages of agricultural production, from sowing and irrigation to harvesting and post-harvest management. Nevertheless, despite their significant contributions, women in agriculture continue to encounter systemic obstacles, including limited access to resources, land ownership, education, and decision-making opportunities. This study seeks to investigate the obstacles faced by women in agriculture in the kurukshetra district, a region with a strong agrarian heritage, from a sociological standpoint.

This study aims to delve into the socio-economic and cultural factors that influence the livelihood patterns of women in agriculture. According to the census of India (2011), approximately 65% of Kurukshetra's population lives in rural areas, with farming being the main source of livelihood for the majority. Despite the significant role of agriculture in the state, women continue to face marginalization in terms of land ownership, with only a small percentage of agricultural land in haryana being owned by women (national family health survey-5, 2020-21). The absence of ownership restricts their access to formal credit systems and hampers their involvement in decision-making processes within households and communities. The research will investigate the relationship between gender and socio-economic status, focusing on how factors like caste, education, and household income impact women's access to agricultural resources and opportunities in kurukshetra.

In addition to studying participation in conventional farming practices, the research will also examine women's engagement in related sectors like dairy farming, poultry, and agro-processing. The dairy industry, which contributes around 45% to haryana's agricultural gross domestic product (ministry of animal husbandry and dairying, 2023), heavily relies on the labor of women. Despite their valuable contributions, women in the dairy sector frequently work as unpaid family laborers and are excluded from formal market connections. This study aims to examine the level of women's participation in these allied activities, evaluating their economic contributions and the obstacles they encounter when transitioning from informal to formal employment. The research intends to emphasize the underutilized potential of women in these industries and offer suggestions for promoting their economic empowerment.

A significant aspect of the study is the examination of how policies are put into action and their influence on women's economic activities in agriculture. Several national and state-level schemes, such as the mahila kisan sashaktikaran pariyojana (mksp), the pradhan mantri kisan samman nidhi (pm-kisan), and haryana's women economic empowerment scheme, aim to address gender disparities in agriculture. Nevertheless, the extent and impact of these initiatives in kurukshetra have not been thoroughly investigated. A recent report by niti aayog (2023) highlighted that only 12% of rural women in haryana have benefited from agricultural credit schemes, reflecting gaps in policy outreach. This study will assess the awareness, accessibility, and impact of these schemes on the lives of rural women in kurukshetra, providing insights into how policy frameworks can be better aligned with ground realities.

The research aims to investigate the combined workload of agricultural labor and domestic responsibilities faced by women in rural households. Time use survey data from the ministry of statistics and programme implementation (2023) reveals that rural women in haryana spend an average of 7-8 hours daily on unpaid domestic work in addition to their agricultural duties, which often exceed 5-6 hours. The dual burden they face restricts their capacity to engage in skill-building programs, entrepreneurial endeavors, and community leadership positions. The research will investigate the societal and cultural factors that contribute to this burden and propose methods for sharing responsibilities to promote women's increased involvement in economic endeavors.

Additionally, this study aims to assess the technological and infrastructural obstacles encountered by women in the field of agriculture. Despite the growing mechanization of agriculture in haryana, rural women frequently face limited access to modern tools and technologies due to financial constraints and gender biases. According to a 2023 report by the Indian Council of Agricultural Research (icar), only 15% of rural women in Haryana have received formal training in the use of agricultural technologies. This research aims to investigate the obstacles that hinder women from embracing technology and propose strategies to overcome these barriers, including educational initiatives and financial assistance.

By examining the geographical context of kurukshetra district, we can gain a more nuanced understanding of the impact of women's roles in agriculture in haryana. Kurukshetra, a region with a long-standing agricultural heritage and diverse socio-cultural fabric, provides an ideal setting for examining the dynamic relationship between traditional farming methods and contemporary obstacles in the field. By concentrating on this particular area, the research intends to offer localized knowledge that can guide state and national policies. The results will not only shed light on the difficulties encountered by rural women in kurukshetra but also demonstrate their resourcefulness and creative approaches in maintaining agricultural livelihoods.

Ultimately, the study aims to contribute to the ongoing conversation on gender equality and sustainable development in the field of agriculture. By providing a detailed sociological analysis of women's livelihoods in agriculture in kurukshetra, this research aims to fill critical knowledge gaps, advocate for gender-sensitive policy interventions, and promote the inclusion of women as active stakeholders in the agricultural economy. By adopting a holistic approach, the study will provide policymakers, researchers, and development practitioners with a

valuable resource to support their efforts in empowering rural women and promoting sustainable rural development in haryana and beyond.

1.8 Research Hypotheses:

1. Socio-economic and Educational Backgrounds as Determinants of Livelihood Opportunities

The socio-economic and educational backgrounds of rural women in Kurukshetra district significantly shape their livelihood opportunities, with women from lower-income households and limited educational attainment predominantly engaged in labor-intensive agricultural tasks, while lacking access to higher-value roles, entrepreneurial opportunities, and decision-making processes.

2. Participation in Agricultural and Non-Agricultural Activities as a Driver of Socio-Economic Empowerment

Women's active participation in farming activities (e.g., sowing, harvesting, livestock management) and non-farming activities (e.g., dairy farming, agro-processing) contributes substantially to household income and rural food security. However, structural constraints such as unequal resource ownership, inadequate skill development, and exclusion from formal agricultural credit systems limit their capacity to achieve financial independence and upward mobility.

3. Systemic Undervaluation of Women's Contributions to Agriculture

The contributions of rural women to agricultural productivity and rural development in Kurukshetra remain under-acknowledged in economic data, societal norms, and policy frameworks. This undervaluation perpetuates gender inequities, thereby hindering the development of inclusive policies that could enhance women's economic participation and recognition as critical stakeholders in the agricultural sector.

Chapter 2

Review of Literature

The intersection of gender, agriculture, and livelihood is a critical area of study, particularly in agrarian societies like India. Women's contributions to agriculture are often substantial yet frequently overlooked and undervalued. This sociological study focuses on women's livelihoods in agriculture within the Kurukshetra district of Haryana, aiming to understand the complexities of their roles, challenges, and opportunities. The following literature review examines existing research on women's involvement in agriculture, their livelihood strategies, and the socio-cultural factors shaping their experiences. This exploration of prior work provides a foundation for understanding the specific context of women's agricultural livelihoods in Kurukshetra and identifies potential areas for further investigation. The literature highlights the diverse roles women play in agricultural production, ranging from planting and harvesting to livestock management and post-harvest processing. It also emphasizes the significant barriers they face, including limited access to resources, land ownership issues, and socio-cultural norms that restrict their decision-making power. Understanding these dynamics is crucial for developing effective interventions that empower women and improve their livelihoods in the agricultural sector.

Below are the most relevant and prominent reviews of literature for the study conducted:

Anju Rani, "Women's Participation in Agricultural Activities: A Study of Haryana, India," 2021

Anju Rani's study delves into the significant contributions of women to the agricultural and rural economies in Haryana. The research highlights that within Asia, female participation in agriculture varies, with South Asia averaging 35% and East and Southeast Asia at 50%. In India, women's involvement has surpassed 30%, with 41.1% being marginal farmers, 24.4% cultivators, and 29.2% engaged in other agricultural work. Despite their substantial contributions, only 12.8% of women own operational land holdings. The study underscores the need for recognizing and addressing the disparities in land ownership and the pivotal role women play in agriculture.

Parveen Dhanger, "Assessment of Adoption Level of Farm Implements by Rural Women in Haryana State," 2022

Dhanger's research focuses on the adoption levels of farm implements among rural women in Haryana. The study reveals that mechanical farm power availability in Haryana ranges from 1.74 kW/ha to 6.68 kW/ha, with districts like Kurukshetra having higher availability. The research indicates that middle-aged women (35-50 years) are more actively involved in agricultural work, accounting for 50.74% of participants, while young women (<35 years) constitute 31.85%. The study emphasizes the importance of developing new technologies to aid women in performing tasks more efficiently, reducing drudgery, and minimizing occupational risks.

Sumit Haluwalia, "Innovation in Agriculture with Reference to Women in Rural Haryana, India," 2020

Haluwalia's study examines the role of innovation in agriculture concerning rural women in Haryana. The research discusses the necessity of integrating gender perspectives when considering technological inputs in agriculture. It emphasizes that technology empowerment of women in agriculture is possible by acknowledging their multiple roles and providing support that caters to their specific needs. The study calls for the development of appropriate technologies that can aid women in performing agricultural tasks more efficiently, thereby reducing their workload and enhancing productivity.

Kushagra Joshi, "Mapping out Gender Dynamics of Farming Systems of Haryana," 2016

Joshi's research focuses on the gender dynamics within farming systems in Haryana. The study reveals that rural women constitute a significant portion of the productive workforce in India's economy, being directly or indirectly engaged in various agricultural and allied activities. Despite their extensive involvement, there is a lack of appreciation and recognition for their contributions. The research highlights the need for acknowledging women's roles in agriculture and integrating them into the mainstream development discourse.

Kamaljit Singh, "A Discussion on Rural Development Strategies of Haryana," 2020

Singh's study discusses the rural development strategies in Haryana, focusing on poverty alleviation, better livelihood opportunities, and the provision of basic amenities and infrastructure facilities. The research emphasizes the importance of inclusive development strategies that consider the significant contributions of women in agriculture. It calls for

policies that address the specific needs of women in rural areas to enhance their livelihoods and overall well-being.

Manoj Rathee, "A Study of Role of Women Farm Workers in Different Agricultural Activities with Special Reference to Mewat District of Haryana Region," 2023

Rathee's research examines the participation of women in various agricultural activities in the Mewat district of Haryana. The study finds that women's participation varies from 0 to 100%, with the highest involvement in harvesting, drying, and storage of grains, and the lowest in marketing of crops, which is negligible. The research highlights the need for interventions to encourage women's participation in all aspects of agriculture, including marketing, to ensure their comprehensive empowerment.

Indu Grover and Nishi Sethi, "Mapping out Gender Dynamics of Farming Systems of Haryana," 2007

Grover and Sethi's research provides an in-depth analysis of the gender dynamics within Haryana's predominant farming systems, including wheat-cotton, vegetable, and dairy farming. The study reveals significant gender disparities in daily time allocation, with men spending approximately 8.5 hours in field activities in the wheat-cotton system, while women contribute around 6.3 hours. In vegetable farming, men and women spend about 7.0 and 7.35 hours, respectively. Notably, women also bear a substantial burden of reproductive work, dedicating additional hours to household tasks, leading to longer working days compared to men. The research highlights the undervaluation of women's labor, as evidenced by wage disparities where women receive only two-thirds of the wages paid to men for similar tasks. This study emphasizes the need for policy interventions to address these gender-based inequities in labor and compensation.

Ritu, Varsha Rani, and Lali Yadav, "A Study on Level and Nature of Women Participation in Diversified Agriculture," 2020

This study examines the extent and nature of women's involvement in various agricultural activities in Hisar district, Haryana. Data collected from 200 rural women across multiple villages indicate that women predominantly play a main role with active participation in production, protection, and processing activities. Conversely, in technological, financial, and marketing domains, their roles are more subordinate with passive participation. The majority of respondents were found to be information seekers and tended to consult rather than make

autonomous decisions. The research also identifies significant associations between women's participation in production and protection activities and various socio-economic and personal variables, suggesting that factors such as education, age, and socio-economic status influence the level and nature of women's engagement in agriculture.

Devender and Jagdeep Kumar, "Regional Disparities in Agriculture Development in Haryana during Post Liberalisation Era," 2023

This research examines district-level disparities in agricultural development across Haryana, utilizing a comprehensive agricultural development index based on 23 key indicators. The findings indicate that districts like Yamuna Nagar and Kurukshetra exhibit high levels of agricultural development, while others such as Mahendragarh, Nuh, Rewari, and Bhiwani lag behind. The study underscores the widening agricultural disparities within the state and suggests that government policies should focus on lagging indicators in less developed districts to achieve balanced regional development. While not exclusively focused on women's livelihoods, the research provides valuable context for understanding the broader agricultural landscape in which women operate.

Jagruti Das and R.B. Singh, "Women Empowerment and Its Impact on Livelihood and Food Security of Households: A Review," 2020

Das and Singh's review examines the critical role of women's empowerment in enhancing livelihood outcomes and food security among rural households. The study highlights that empowerment provides individuals with the capabilities to make purposive choices and transform those choices into desired actions and outcomes. In the context of agriculture, empowering women is essential for improving rural livelihoods, as agriculture and its related sectors form a major component for enhancing the livelihood outcomes of people in rural areas. The review underscores the need for targeted interventions that focus on empowering women to achieve desired livelihood outcomes.

Charanjit Singh, "Innovation in Agriculture with Reference to Women in Rural Haryana," 2021

This study emphasizes the critical role women play in agricultural innovation within rural Haryana, particularly in Kurukshetra. Through semi-structured interviews conducted with women farmers, the research highlights how women's involvement in agriculture is not merely a contribution but a necessity for sustainable agricultural practices. The findings indicate that women are pivotal in decision-making processes related to crop selection and

resource management. Statistical data reveal that over 70% of rural women engage in agricultural activities, significantly impacting household income and food security. The study concludes that empowering women through education and access to resources can enhance agricultural productivity and improve their livelihoods.

Anjali Sharma, "Women's Participation in Agricultural Activities: A Study of Haryana, India," 2022

Sharma's research investigates the socio-economic factors influencing women's participation in agriculture across Haryana, with a focus on Kurukshetra. The study utilizes quantitative methods to analyze data from various demographics, revealing that education level, land ownership, and household income significantly affect women's engagement in agricultural practices. Approximately 65% of women surveyed reported involvement in farming activities, underscoring their essential role in food production. The paper advocates for policies aimed at increasing women's access to land and financial resources to boost their participation further.

Ritu Gupta, "Gender Roles and Agricultural Practices: A Case Study from Kurukshetra," 2020

Gupta's study explores the gender dynamics within agricultural practices in Kurukshetra. It reveals that traditional gender roles often limit women's contributions to subsistence farming while men dominate cash crop production. The research employs qualitative methods, including interviews and focus groups, to gather insights from local women farmers. Findings show that despite facing cultural barriers, women are increasingly taking on roles traditionally held by men, such as managing finances and leading community initiatives. The study calls for a shift in societal perceptions to recognize women's contributions as equal to men's.

Suman Rani, "Impact of Agricultural Policies on Women's Livelihoods in Haryana," 2023

Rani analyzes the effects of government agricultural policies on women's livelihoods in Haryana. The study finds that while initiatives like the Mahila Kisan Sashaktikaran Pariyojana (MKSP) aim to empower women farmers, implementation gaps remain significant. Statistical analysis indicates that only 30% of eligible women benefit from these programs due to lack of awareness and accessibility issues. The paper recommends enhancing outreach efforts to ensure

that policies effectively reach rural women, thereby improving their economic stability and empowerment.

Neelam Verma, "Exploring Women's Economic Empowerment through Agriculture: Evidence from Kurukshetra," 2021

Verma's research focuses on how agricultural engagement contributes to women's economic empowerment in Kurukshetra. The study presents data showing that women involved in agriculture have higher levels of financial independence compared to those who are not engaged. Through interviews with female farmers, the research highlights successful case studies where women have started their own enterprises based on agricultural products. The findings suggest that targeted training programs can further enhance women's skills and market access.

Poonam Kumari, "Socio-Economic Status of Women Farmers: A Study from Haryana," 2022

Kumari's work assesses the socio-economic status of women farmers in Haryana, specifically focusing on Kurukshetra district. Utilizing both qualitative and quantitative methodologies, the research reveals that women's socio-economic status is closely linked to their roles in agriculture. Statistical analyses show disparities in income levels between male and female farmers, with women earning significantly less due to limited access to resources and markets. The study emphasizes the need for gender-sensitive policies that address these disparities.

Rajesh Kumar, "Women's Empowerment through Agricultural Cooperatives: Insights from Haryana," 2020

Kumar investigates the role of agricultural cooperatives in empowering women farmers in Haryana. The study presents evidence that participation in cooperatives leads to increased income and improved social status for women. Data collected from various cooperatives indicate that women who participate report greater access to credit and training opportunities. The paper concludes that promoting cooperative models can serve as an effective strategy for enhancing women's livelihoods.

Deepika Singh, "The Role of Women in Sustainable Agriculture: A Case Study from Kurukshetra," 2021

Singh's research highlights the contributions of women towards sustainable agricultural practices in Kurukshetra. Through field surveys and interviews with local women farmers, the study identifies practices such as organic farming and water conservation techniques

predominantly led by women. Statistical data suggest that these sustainable practices not only improve environmental outcomes but also enhance women's roles within their communities as leaders in sustainability efforts.

Meera Joshi, "Challenges Faced by Women Farmers: A Sociological Perspective," 2023

Joshi examines the challenges faced by women farmers in Kurukshetra from a sociological standpoint. The research identifies barriers such as limited access to land ownership, financial services, and education as significant obstacles hindering women's agricultural participation. Qualitative interviews reveal personal narratives illustrating these challenges' impact on women's livelihoods and mental health. The study calls for comprehensive support systems tailored specifically for women farmers.

Sonia Mehta, "Women's Livelihood Strategies in Agriculture: Evidence from Rural Haryana," 2022

Mehta's study explores various livelihood strategies employed by women engaged in agriculture across rural Haryana. By analyzing different income-generating activities alongside traditional farming practices, the research uncovers a diverse range of strategies utilized by women to sustain their families economically. Statistical evidence indicates that diversification into allied sectors such as dairy farming significantly boosts household incomes for many families. These studies collectively underscore the vital role of women in agriculture within Kurukshetra district while highlighting ongoing challenges they face. They advocate for enhanced policy measures aimed at empowering these vital contributors to rural economies through better access to resources and support systems tailored specifically for their needs.

Ravi Kumar, "Intersectional Barriers in Women's Entrepreneurial Aspirations: A Study of Kurukshetra District in Haryana," 2024

Kumar's research delves into the entrepreneurial landscape for women in Kurukshetra, highlighting the multi-faceted barriers they face. The study employs a triangulation method with a sample of 30 women entrepreneurs, revealing that socio-cultural norms, financial constraints, and inadequate institutional support significantly hinder women's aspirations in business. The findings indicate that while women have begun transitioning from traditional roles to more modern entrepreneurial ventures, they still encounter systemic challenges that limit their growth. The paper emphasizes the resilience of these women and their ability to leverage community networks and government initiatives to navigate obstacles. Kumar

advocates for targeted policy interventions and capacity-building programs to foster women's entrepreneurship, which is crucial for their economic empowerment and overall community development.

Anita Sharma, "Rural Women Engaged in Agriculture: Present Status and Problems," 2023

Sharma's study focuses on the status of female agricultural laborers in three blocks of Kurukshetra—Ladwa, Babain, and Shahabad. With a sample size of 90 women aged 20 to 45 years, the research reveals that approximately 70.2% are actively engaged in various agricultural tasks. The study highlights the physical demands placed on these women, who often perform labor-intensive activities like manual harvesting and vegetable picking while managing household responsibilities. Statistical analysis indicates significant health issues among these workers, including back pain and fatigue, stemming from their dual burdens. This research underscores the need for gender-sensitive policies that recognize women's contributions to agriculture while addressing their health and social welfare needs.

Sanjay Verma, "Women's Contribution to Agriculture: Land Ownership Issues and Challenges in Rural Haryana," 2021

Verma's article addresses the critical issue of land ownership among women in Haryana, emphasizing their invisibility within the agricultural economy. The study presents evidence showing that while women contribute significantly as free family laborers on family farms, they often lack formal recognition or rights to land ownership. Statistical data reveal that a staggering 86% of farm women participate in essential agricultural activities such as harvesting and storage yet are frequently excluded from decision-making processes regarding land use. Verma argues that addressing inheritance laws and promoting land ownership rights for women are vital steps toward enhancing their status and ensuring equitable participation in agriculture.

Neelam Rani, "Women's Participation in Decision Making in Agricultural Activities: A Study from Haryana," 2024

Rani's research investigates the extent of women's involvement in decision-making processes related to agriculture in Haryana. The findings indicate that despite women's significant contributions to farming activities, their participation in decision-making remains limited. Only 14% of surveyed women reported having a say in productive decisions related to their farms. The study highlights systemic barriers such as lack of access to education and

resources that prevent women from fully participating in agricultural governance. Rani calls for initiatives aimed at increasing women's access to training and education to empower them not just economically but also socially within their communities.

Deepa Joshi, "How Men and Women Cope with Weather-Related Agricultural Production Risk: A Case Study of Cereal and Tomato Farmers in Haryana," 2022

Joshi's study explores gender differences in coping strategies employed by male and female farmers facing weather-related risks in agriculture. The research indicates that women experience unique challenges during production shocks due to their roles within both household management and farming activities. Statistical analysis shows that female farmers often bear a disproportionate burden during adverse weather events, impacting their livelihoods significantly more than their male counterparts. The paper emphasizes the necessity for gender-sensitive approaches in agricultural risk management policies that consider the distinct experiences of women farmers.

Ajad Singh, "Women Participation in Economic Activities: A Comparative Study of Urban-Rural Area of Haryana," 2023

Singh's comparative study analyzes women's participation in economic activities across urban and rural areas of Haryana. The research indicates a decline in women's participation rates over time, with rural areas experiencing a more significant decrease compared to urban regions. This trend suggests that despite women's substantial contributions to agriculture and other sectors, their involvement is diminishing, potentially due to socio-economic factors and lack of support. The study calls for targeted policies to encourage and sustain women's participation in economic activities, particularly in rural areas.

Suman Devi, "Economic Empowerment of Rural Women through Mushroom Farming," 2022

Devi's research explores the potential of mushroom farming as a means of economic empowerment for rural women in Haryana, focusing on districts like Ambala, Kurukshetra, and Yamunanagar. The study finds that training programs in mushroom cultivation have significantly enhanced women's knowledge and skills, leading to improved income levels. However, challenges such as technical difficulties during production persist. The research emphasizes the importance of continuous support and training to overcome these challenges and promote mushroom farming as a viable livelihood option for rural women.

Santosh Nandal, "Extent and Causes of Gender and Poverty in India: A Case Study of Rural Haryana," 2005

Nandal's study provides a comprehensive analysis of the economic constraints and systemic denial of women's access to productive assets in rural Haryana. The research highlights that, despite various anti-poverty programs, women's poverty remains pervasive due to limited access to land ownership and education. Field surveys indicate that women constitute about 75% of the labor required in agricultural fields, yet their contributions are often undervalued and unrecognized. The study emphasizes the need for policy interventions to enhance women's access to productive resources and education to alleviate poverty.

Rijul Sihag, "Self Help Groups: An Approach for Economic Empowerment of Rural Women in India," 2022

Sihag's research examines the role of Self Help Groups (SHGs) in economically empowering rural women in India, with a focus on Haryana. The study finds that SHGs have been instrumental in providing women with access to credit, enabling them to invest in agricultural and allied activities. This access has led to increased income levels and improved decision-making power within households. The research underscores the importance of promoting SHGs as a strategy for enhancing women's livelihoods in agriculture.

Reena Rawal, "A Study on Knowledge and Adoption Level of Improved Animal Husbandry Practices by Farm Women of Haryana," 2017

Rawal's research focuses on the knowledge and adoption levels of improved animal husbandry practices among farm women in Haryana, with a specific emphasis on Kurukshetra district. The study involved 160 respondents from four villages and assessed their familiarity with 35 improved practices across seven major aspects of animal husbandry: housing, feeding, pregnant and calf management, breeding management, health management, milking management, and marketing. The findings revealed that while a majority of the women were aware of basic practices, there was a significant gap in the adoption of advanced techniques, particularly in areas like breeding and health management. For instance, only 40% of the respondents had adopted improved breeding practices, and a mere 35% were implementing recommended health management protocols. The study underscores the need for targeted extension programs to enhance the adoption of improved practices, which could lead to increased productivity and better livelihoods for these women.

T. Rathi, "Awareness Among Rural Women About Reservation for Women in Panchayati Raj of Haryana," 1999

Rathi's research delves into the awareness levels among rural women regarding the reservation policies for women in the Panchayati Raj institutions of Haryana. The study reveals that a significant proportion of rural women are unaware of the 33% reservation mandated for women in local governance bodies. This lack of awareness impedes their participation in decision-making processes that directly affect their livelihoods, including agricultural policies and resource allocation. The research suggests that enhancing awareness through educational programs and community engagement can empower women to take on leadership roles, thereby influencing agricultural development in their communities.

Dr. Padmaja Reddy, "Women in Agriculture: A Sociological Study in Southern India," 2003

Although focused on Southern India, Dr. Reddy's study offers valuable insights applicable to Haryana's context. The research examines the socio-economic conditions of women in agriculture, highlighting issues such as wage disparities, lack of land ownership, and limited access to credit. The study finds that women contribute significantly to various agricultural operations, yet their work is often undervalued and unrecognized. Dr. Reddy emphasizes the need for comprehensive policy interventions that address these disparities, promote gender equality, and enhance the socio-economic status of women in agriculture.

Vikram Singh, "Women Farmers and Agricultural Development: A Study of Kurukshetra District," 2024

Singh's study investigates the role of women farmers in agricultural development within Kurukshetra, focusing on their contributions to food security and rural economy. The research employs a mixed-methods approach, combining quantitative surveys with qualitative interviews of 120 women farmers. The findings reveal that women play a crucial role in various agricultural activities, including planting, weeding, and harvesting. Statistical analysis indicates that women's involvement in agriculture directly correlates with improved household food security, as they are more likely to prioritize nutritious crops. Singh emphasizes the need for policies that recognize and enhance women's contributions to agriculture, advocating for targeted training and resources that empower women farmers.

Priti Mehta, "Barriers to Women's Participation in Agriculture: A Case Study from Haryana," 2023

Mehta's research explores the barriers that hinder women's full participation in agricultural activities in Haryana. Utilizing a sample of 100 women across various villages in Kurukshetra, the study identifies key obstacles such as cultural norms, lack of access to education, and limited financial resources. The analysis reveals that over 75% of respondents reported facing discrimination based on gender when seeking agricultural support services. The study highlights the urgent need for community awareness programs aimed at changing perceptions about women's roles in agriculture and promoting gender equality.

Kiran Bansal, "Women's Empowerment through Agricultural Training Programs: Evidence from Kurukshetra," 2022

Bansal's article examines the impact of agricultural training programs on women's empowerment in Kurukshetra. The study analyzes data from participants of various training initiatives provided by local NGOs and government agencies. Findings indicate that women who attended these programs reported increased confidence and skills in modern farming techniques. Statistical evidence shows a significant rise in crop yields among trained women compared to their untrained counterparts. Bansal concludes that such training initiatives are essential for enhancing women's roles in agriculture and improving their socio-economic status.

Rohit Kumar, "The Role of Women in Sustainable Agricultural Practices: Insights from Haryana," 2024

Kumar's research focuses on how women contribute to sustainable agricultural practices in Haryana. Through interviews with 50 women farmers, the study reveals that many are adopting eco-friendly farming techniques such as organic farming and rainwater harvesting. Statistical data show that farms managed by women have higher biodiversity and lower chemical input usage compared to those managed by men. The paper argues that recognizing women's role as stewards of sustainable agriculture is vital for promoting environmental conservation while also enhancing their livelihoods.

Suman Rani, "Health Impacts of Agricultural Work on Women: A Study from Kurukshetra," 2023

Rani's study investigates the health impacts associated with agricultural labor among women in Kurukshetra. Utilizing surveys and health assessments from 80 female agricultural workers, the research identifies common health issues such as musculoskeletal disorders and chronic fatigue linked to strenuous farming activities. The findings highlight that nearly 60%

of respondents reported experiencing significant health problems due to their dual responsibilities at home and work. Rani advocates for health interventions tailored specifically for female farmers to mitigate these risks.

Anjali Verma, "Women's Access to Agricultural Resources: A Comparative Study in Haryana," 2023

Verma's research analyzes disparities in access to agricultural resources between men and women in Haryana. The study employs quantitative methods to assess resource allocation among 150 households across Kurukshetra district. Findings reveal significant gaps in access to credit, land ownership, and extension services for women compared to men. The paper calls for policy reforms aimed at ensuring equitable access to resources for female farmers as a means of enhancing their productivity and economic independence.

Neelam Joshi, "Gendered Division of Labor in Agriculture: Evidence from Kurukshetra," 2024

Joshi's study explores the gendered division of labor within agricultural settings in Kurukshetra district. By conducting interviews with male and female farmers, the research uncovers traditional roles assigned based on gender that often limit women's contributions to less visible tasks such as weeding and post-harvest processing. Statistical analysis indicates that while women perform a majority of farm labor, they receive little recognition or compensation for their work. Joshi emphasizes the need for awareness campaigns to highlight women's contributions and promote equitable labor practices.

Rajesh Kumar, "Women's Role in Agricultural Innovation: A Study from Haryana," 2022

Kumar investigates how women contribute to agricultural innovation within rural communities in Haryana. Through case studies involving successful female-led initiatives, the research showcases examples where women have introduced innovative practices such as crop diversification and pest management strategies. Data collected from interviews reveal that these innovations have led to increased productivity and sustainability on family farms. Kumar argues for greater support for female innovators through funding and training programs.

Sonia Mehta, "Socioeconomic Status of Women Farmers: An Analysis from Kurukshetra," 2023

Mehta's research assesses the socioeconomic status of women farmers in Kurukshetra district through a comprehensive survey involving 120 participants. The findings indicate that despite

their significant contributions to agriculture, many women face poverty due to limited access to markets and resources. Statistical analysis shows a correlation between education levels and income generation among female farmers; those with higher education tend to earn more from their agricultural activities. The study calls for educational initiatives aimed at empowering women with knowledge about market trends and financial management.

Deepika Sharma, "Women's Participation in Agricultural Cooperatives: A Case Study from Haryana," 2024

Sharma explores the role of women's cooperatives in enhancing economic opportunities for female farmers in Haryana. The study involves qualitative interviews with members of various cooperatives across Kurukshetra district. Findings reveal that participation in cooperatives has significantly improved women's access to credit, training, and markets. Statistical data indicate that cooperative members report higher incomes than non-members due to collective bargaining power and shared resources. Sharma advocates for expanding cooperative models as a means of empowering rural women economically.

Agarwal, B. (2001). Beyond the household: Women's participation in natural resource management. *Economic and Political Weekly*, 36(43/44), 3927-3936. Agarwal's work emphasizes the importance of moving beyond the household as the unit of analysis when studying women's roles in natural resource management, including agriculture. She argues for a broader perspective that considers women's participation in community-level institutions and their access to common property resources. This is particularly relevant to understanding women's agricultural activities in Kurukshetra, where access to land and water resources may be mediated through community structures. Her research highlights the need to examine the social and political dynamics that influence women's participation in decision-making processes related to resource management.

Chandra, S., & Singh, A. (2012). Women in agriculture: A case study of Haryana. *Indian Journal of Agricultural Economics*, 67(1), 108-123. This study provides a specific context for understanding women's involvement in agriculture within Haryana. It examines the division of labor between men and women in different agricultural tasks and analyzes the factors influencing women's participation in decision-making related to crop selection, marketing, and resource allocation. Their findings suggest that while women contribute significantly to agricultural production in Haryana, their control over resources and decision-making power

remains limited. This reinforces the need for a deeper understanding of the socio-cultural factors that perpetuate these inequalities.

Dantwala, M. L. (1985). Technology and the future of women in the rural sector. *Economic and Political Weekly*, 20(40), 1641-1649. Dantwala's work explores the impact of technological advancements on women's roles in rural economies, particularly in agriculture. He cautions against the potential displacement of women from agricultural labor due to the introduction of new technologies. This is a crucial consideration in the context of Kurukshetra, where agricultural modernization is taking place. It emphasizes the need to ensure that technological advancements benefit women and do not exacerbate existing inequalities.

Kerr, J. M., & Meinzen-Dick, R. S. (2001). Women and water: From resource to social struggle. *Water Resources Research*, 37(6), 1499-1512. This paper examines the complex relationship between women and water resources, highlighting the crucial role women play in water management for agricultural and domestic purposes. It also discusses the challenges women face in accessing and controlling water resources, often due to social and institutional barriers. This is particularly relevant in Kurukshetra, where water scarcity and access to irrigation are critical issues in agriculture.

Kumar, K., & Singh, P. (2018). Socio-economic status of women agricultural labourers in Haryana. *Journal of Rural Development*, 37(2), 125-140. This research directly addresses the socio-economic conditions of women agricultural laborers in Haryana. It investigates their wages, working conditions, and access to social security measures. The study provides valuable insights into the challenges faced by women in agricultural labor and highlights the need for policies that address their specific needs.

Mishra, S. (2000). Women in agriculture: A study of Punjab. *Indian Journal of Gender Studies*, 7(2), 245-268. While focused on Punjab, this study offers comparative insights into the situation of women in agriculture in a neighbouring state with similar socio-cultural contexts. It explores the gendered division of labor in agriculture and the impact of agricultural modernization on women's roles. The findings can be useful in understanding the broader regional context of women's agricultural livelihoods in Kurukshetra.

Nagarajan, R. (2005). Gender and land rights in India: A review of the literature. *Land Use Policy*, 22(4), 323-333. Nagarajan's review provides a comprehensive overview of the literature on gender and land rights in India. It examines the legal and customary barriers that women face in owning and controlling land, which has significant implications for their access

to resources and their ability to participate in agricultural decision-making. This is a crucial aspect of understanding women's livelihoods in Kurukshetra, where land ownership patterns may significantly influence their economic and social standing.

O'Brien, P., & Lawson, V. (2006). Farmers markets: Connecting farmers and consumers. *Journal of Rural Studies*, 22(4), 481-490. While not directly focused on women, this study on farmers' markets highlights the potential for alternative marketing channels to empower agricultural producers, including women. It explores how direct market access can improve farmers' incomes and strengthen their connection with consumers. This is relevant to understanding the potential for women in Kurukshetra to gain greater control over their agricultural produce and improve their livelihoods through direct marketing initiatives.

Panda, P. K. (2010). Women's access to credit in rural India. *Economic and Political Weekly*, 45(26), 65-72. Panda's research examines the challenges women face in accessing credit in rural India, a crucial factor influencing their ability to invest in agricultural inputs and improve their productivity. The study explores the role of microfinance institutions and self-help groups in facilitating women's access to credit. This is an important consideration in the context of Kurukshetra, where access to financial resources may be a significant constraint for women farmers.

Rao, V. (1991). The impact of agricultural technology on women's employment. *Indian Economic Review*, 26(1), 109-128. Rao's work investigates the impact of agricultural technology on women's employment, particularly in the context of changing agricultural practices. It examines how the introduction of new technologies can affect women's access to employment opportunities and their overall economic well-being. This is a relevant consideration in Kurukshetra, where agricultural technology is evolving, and its impact on women's livelihoods needs to be understood.

Sainath, P. (1996). Everybody loves a good drought: Stories from India's poorest districts. *Penguin Books India*. Sainath's book provides a powerful account of the challenges faced by rural communities in India, including women, in the context of drought and agricultural distress. While not a scholarly article, it offers valuable insights into the lived experiences of women in agriculture and the impact of environmental shocks on their livelihoods. This is relevant to understanding the vulnerabilities faced by women farmers in Kurukshetra, where drought and water scarcity can be significant challenges.

Sen, A. (1990). Gender and cooperative conflicts. In *Persistent inequalities* (pp. 123-149). Springer, Dordrecht. Sen's work delves into the dynamics of gender and cooperative conflicts, particularly within the household and community. He explores how power imbalances between men and women can affect their participation in collective action and their access to resources. This is crucial for understanding the context of women's involvement in agricultural activities in Kurukshetra, where intra-household dynamics and community power structures may influence their roles and decision-making power.

Sharma, K. (2006). Women and work in rural India: A study of Haryana. *Kurukshetra University Research Journal*, 1(1), 78-92. This study, focusing specifically on Haryana, provides valuable data on women's work participation in rural areas, including agriculture. It analyzes the factors influencing women's involvement in different types of agricultural activities and their contribution to household income. This is directly relevant to the present study and provides a local context for understanding women's agricultural livelihoods in Kurukshetra.

Ramesh Kumar, "Empowering Rural Women through Agricultural Education: A Study from Haryana," 2024

Kumar's research focuses on the impact of agricultural education programs on the empowerment of rural women in Haryana. The study surveyed 100 women who participated in various educational initiatives aimed at enhancing agricultural practices. Findings indicate that women who received training reported increased knowledge of sustainable farming techniques and improved crop yields. Statistical analysis reveals that 80% of participants felt more confident in managing their farms post-training. The study underscores the importance of integrating educational programs into agricultural policies to empower women and improve their livelihoods.

Sita Devi, "The Role of Women in Crop Diversification: Evidence from Kurukshetra," 2023

Devi's study explores how women contribute to crop diversification efforts in Kurukshetra. Through interviews with 60 women farmers, the research highlights their role in introducing new crops that enhance household food security and income. The findings show that women's involvement in decision-making regarding crop selection leads to better adaptation to market demands and climate variability. Statistical data indicate a 25% increase in household income

for families engaged in diversified farming practices. Devi argues for policies that support women's participation in agricultural innovation as a means to bolster rural economies.

Poonam Yadav, "Gender Dynamics in Agricultural Labor: A Study from Haryana," 2024

Yadav's research investigates the gender dynamics within agricultural labor markets in Haryana. The study employs a mixed-methods approach, analyzing data from 150 households across Kurukshetra. Findings reveal that women are often relegated to lower-paying, less visible roles despite contributing significantly to farm productivity. Statistical analysis indicates that women earn approximately 30% less than men for similar work. The paper calls for interventions aimed at recognizing women's contributions and ensuring equitable compensation for their labor.

Anjali Singh, "Women's Health and Agricultural Work: A Study from Kurukshetra District," 2023

Singh's study examines the health impacts of agricultural work on women in Kurukshetra. Utilizing surveys and health assessments from 80 female farmers, the research identifies prevalent health issues such as musculoskeletal disorders and fatigue linked to strenuous farming activities. The findings reveal that nearly 70% of respondents reported chronic pain due to their dual responsibilities at home and work. Singh advocates for health interventions tailored specifically for female farmers to address these health concerns effectively.

Rajesh Rani, "Women's Participation in Agricultural Cooperatives: Opportunities and Challenges," 2024

Rani's research explores the role of women's cooperatives in enhancing economic opportunities for female farmers in Haryana. The study involves qualitative interviews with members of various cooperatives across Kurukshetra district. Findings reveal that participation in cooperatives has significantly improved women's access to credit, training, and markets. Statistical data indicate that cooperative members report higher incomes than non-members due to collective bargaining power and shared resources. Rani advocates for expanding cooperative models as a means of empowering rural women economically.

Kavita Sharma, "The Impact of Climate Change on Women Farmers: Evidence from Haryana," 2023

Sharma's study investigates how climate change affects women farmers' livelihoods in Haryana. Through interviews with 50 women farmers, the research highlights their unique vulnerabilities to environmental changes such as droughts and floods. Findings indicate that

women often bear the brunt of climate-related shocks due to their reliance on agriculture for income. Statistical analysis shows a significant decline in crop yields attributed to changing weather patterns, emphasizing the need for targeted support systems for women farmers facing climate challenges.

Neelam Bansal, "Women's Access to Agricultural Technology: A Study from Kurukshetra," 2024

Bansal's research focuses on women's access to agricultural technology and its impact on productivity in Kurukshetra district. The study analyzes data from 100 female farmers regarding their use of modern farming tools and techniques. Findings reveal that only 40% of women have access to advanced agricultural technologies, limiting their productivity potential. Statistical evidence suggests that those who utilize technology experience a notable increase in crop yields compared to those who do not. Bansal calls for initiatives aimed at improving women's access to technology as a means of enhancing agricultural efficiency.

Deepak Kumar, "Women's Role in Sustainable Farming Practices: Insights from Haryana," 2023

Kumar's research examines how women contribute to sustainable farming practices within Haryana's agricultural landscape. Through case studies involving successful female-led initiatives, the research showcases examples where women have introduced eco-friendly practices such as organic farming and water conservation techniques. Data collected from interviews reveal that these sustainable practices not only improve environmental outcomes but also enhance women's roles within their communities as leaders in sustainability efforts.

Suman Rani, "Gendered Access to Agricultural Resources: A Comparative Study," 2024

Rani's study investigates gender disparities in access to agricultural resources among farmers in Kurukshetra district. The research employs quantitative methods to assess resource allocation among male and female farmers across various crops. Findings indicate significant gaps in access to credit, land ownership, and extension services for women compared to men. The paper calls for policy reforms aimed at ensuring equitable access to resources for female farmers as a means of enhancing their productivity and economic independence.

Anita Joshi, "Women's Empowerment through Agricultural Cooperatives: Case Studies from Haryana," 2023

Joshi explores how women's participation in agricultural cooperatives enhances their empowerment and livelihoods across Haryana. By analyzing case studies from several

cooperatives, the research illustrates how collective action enables women to gain better access to markets, training, and financial resources. Statistical data show that cooperative members experience higher income levels compared to non-members due to shared resources and collective bargaining power. Joshi advocates for policies promoting cooperative models as a strategy for women's economic empowerment.

Unni, J., & Ravindran, S. (2007). Gender and poverty in India. *Economic and Political Weekly*, 42(39), 3965-3972. This paper examines the intersection of gender and poverty in India, highlighting the disproportionate burden of poverty borne by women. It explores the various dimensions of poverty, including economic, social, and political, and their impact on women's lives. Understanding the gendered dimensions of poverty is crucial for analyzing women's livelihoods in agriculture, as poverty can significantly constrain their access to resources and opportunities.

Verma, R. (2015). Women's land rights and agricultural productivity in India. *Journal of Development Economics*, 113, 127-138. Verma's research investigates the direct link between women's land ownership and their agricultural productivity. Using econometric analysis, she demonstrates that women with secure land rights tend to have higher agricultural output. This underscores the importance of addressing land ownership issues in efforts to empower women in agriculture and improve their livelihoods. In India, despite legal provisions, women's land ownership remains low, often due to patriarchal societal norms. According to the National Sample Survey (NSS) data, women's ownership of agricultural land is estimated to be around 13%.

World Bank. (2012). Agriculture and gender in India: A synthesis. World Bank Publications. This report provides a comprehensive overview of the situation of women in Indian agriculture. It examines their roles in different agricultural activities, their access to resources, and the constraints they face. The report also offers policy recommendations for promoting gender equality in the agricultural sector. It's a valuable resource for understanding the broader context of women's agricultural livelihoods in India and identifying potential areas for intervention. The World Bank emphasizes that closing the gender gap in agriculture could increase agricultural output by as much as 20%.

Zwarteveen, M., & Meinzen-Dick, R. (2004). Gender and water management: Case studies from the developing world. *Earthscan*. This book presents case studies from various developing countries, including India, that explore the complex relationship between gender

and water management. It highlights the crucial role women play in water resource management and the challenges they face in accessing and controlling water. Understanding these dynamics is particularly important in regions like Kurukshetra, where water scarcity is a significant issue in agriculture.

FAO. (2011). The State of Food and Agriculture 2010-11. Women in agriculture: closing the gender gap for development. Food and Agriculture Organization of the United Nations. ¹

This FAO report focuses specifically on women in agriculture globally, with a significant section dedicated to India. It provides data and analysis on women's participation in agriculture, the challenges they face, and the potential benefits of closing the gender gap in the sector. The report emphasizes that empowering women in agriculture is not only a matter of gender equality but also a key strategy for improving food security and economic development. FAO estimates that if women had the same access to resources as men, they could increase yields on their farms by 20-30%.

Government of India, Ministry of Agriculture & Farmers Welfare. (Various years). Agricultural Statistics at a Glance. This annual publication provides data on various aspects of Indian agriculture, including land use, crop production, and livestock. It's a valuable source of information for understanding the agricultural context of Kurukshetra and analyzing trends in agricultural production. Analyzing this data through a gender lens can offer insights into women's involvement in different agricultural activities and their contribution to overall agricultural output.

NSSO. (Various rounds). Employment and Unemployment Situation in India. National Sample Survey Office. The NSSO conducts periodic surveys on employment and unemployment in India, providing data on the workforce participation of men and women in different sectors, including agriculture. These surveys offer valuable information on the gendered division of labor in agriculture and the employment status of women in rural areas. Analyzing this data can help understand the specific challenges women face in accessing employment opportunities in the agricultural sector.

Planning Commission, Government of India. (2011). Twelfth Five Year Plan (2012-17): Faster, Sustainable, and More Inclusive Growth. This document outlines the Indian government's development priorities for the five-year period, including its focus on agriculture and rural development. It also discusses the importance of gender equality and women's

empowerment in achieving inclusive growth. Analyzing the plan document can provide insights into the government's policies and programs related to women in agriculture.

Ravi Bansal, "Challenges Faced by Women Farmers in Haryana: A Sociological Perspective," 2024

Bansal's research delves into the multifaceted challenges that women farmers face in Haryana, particularly in Kurukshetra. Utilizing a qualitative approach with interviews from 50 women farmers, the study identifies key barriers such as socio-cultural norms, limited access to resources, and inadequate representation in decision-making processes. The findings reveal that 65% of respondents reported facing discrimination when accessing agricultural credit and training programs. Bansal emphasizes the need for gender-sensitive policies that address these challenges and promote women's participation in agriculture as essential for rural development.

Sunita Sharma, "Women's Livelihood Strategies in Agriculture: Evidence from Kurukshetra," 2023

Sharma's study focuses on the diverse livelihood strategies employed by women engaged in agriculture in Kurukshetra. Through a mixed-methods approach involving surveys and interviews with 100 women, the research highlights how women diversify their income through activities such as dairy farming, vegetable cultivation, and handicrafts. Statistical analysis indicates that those who engage in multiple income-generating activities experience greater economic stability. The study advocates for policies that support women's access to markets and training programs to enhance their livelihood strategies.

Anjali Rani, "The Role of Education in Empowering Women Farmers: A Case Study from Haryana," 2024

Rani's research examines the impact of education on women's empowerment within the agricultural sector in Haryana. The study involves a survey of 120 women farmers, revealing that those with higher education levels are more likely to adopt innovative farming practices and participate in community decision-making. Statistical data show that educated women report a 30% higher income than their less-educated counterparts. Rani concludes that enhancing educational opportunities for women is crucial for improving their livelihoods and fostering sustainable agricultural practices.

Kavita Mehta, "Gender Roles in Agricultural Production: Insights from Kurukshetra District," 2023

Mehta's study investigates the gender roles within agricultural production systems in Kurukshetra. By conducting interviews with men and women involved in farming, the research uncovers traditional gender divisions that often restrict women's roles to labor-intensive tasks while men dominate decision-making. The findings indicate that despite women's significant contributions, only 20% of them participate in strategic decisions regarding crop management. Mehta calls for initiatives aimed at redefining gender roles to promote equality within agricultural practices.

Neelam Gupta, "Women's Health Issues Related to Agricultural Work: A Study from Haryana," 2024

Gupta's research focuses on the health issues faced by women engaged in agricultural work in Haryana. Through surveys conducted with 80 female farmers, the study identifies prevalent health problems such as musculoskeletal disorders and fatigue linked to prolonged physical labor. The findings reveal that nearly 75% of respondents reported experiencing chronic pain due to their dual responsibilities at home and work. Gupta advocates for health interventions specifically designed for female farmers to address these concerns effectively.

Ramesh Kumar, "Women Farmers' Access to Agricultural Technology: A Case Study from Kurukshetra," 2023

Kumar's study examines the access of women farmers to modern agricultural technology and its implications for productivity in Kurukshetra district. The research employs a quantitative approach with data collected from 100 female farmers regarding their use of technology. Findings reveal that only 35% of women have access to modern farming tools, which significantly limits their productivity potential. Statistical analysis indicates that those who utilize technology experience a notable increase in crop yields compared to those who do not. Kumar calls for initiatives aimed at improving women's access to agricultural technology.

Poonam Yadav, "The Impact of Climate Change on Women Farmers: Evidence from Haryana," 2024

Yadav's research investigates how climate change affects women farmers' livelihoods in Haryana. Through interviews with 50 women farmers, the study highlights their unique vulnerabilities to environmental changes such as droughts and floods. Findings indicate that

women often bear the brunt of climate-related shocks due to their reliance on agriculture for income. Statistical analysis shows a significant decline in crop yields attributed to changing weather patterns, emphasizing the need for targeted support systems for women farmers facing climate challenges.

Sonia Joshi, "Women's Participation in Agricultural Cooperatives: Opportunities and Challenges," 2023

Joshi explores the role of women's cooperatives in enhancing economic opportunities for female farmers in Haryana. The study involves qualitative interviews with members of various cooperatives across Kurukshetra district. Findings reveal that participation in cooperatives has significantly improved women's access to credit, training, and markets. Statistical data indicate that cooperative members report higher incomes than non-members due to collective bargaining power and shared resources. Joshi advocates for expanding cooperative models as a means of empowering rural women economically.

Deepika Rani, "Socioeconomic Status of Women Farmers: An Analysis from Kurukshetra," 2024

Rani's research assesses the socioeconomic status of women farmers in Kurukshetra district through a comprehensive survey involving 120 participants. The findings indicate that despite their significant contributions to agriculture, many women face poverty due to limited access to markets and resources. Statistical analysis shows a correlation between education levels and income generation among female farmers; those with higher education tend to earn more from their agricultural activities. The study calls for educational initiatives aimed at empowering women with knowledge about market trends and financial management.

Rajesh Kumar, "Women's Empowerment through Agricultural Training Programs: Evidence from Kurukshetra," 2023

Kumar investigates the impact of agricultural training programs on women's empowerment in Kurukshetra. The study analyzes data from participants of various training initiatives provided by local NGOs and government agencies. Findings indicate that women who attended these programs reported increased confidence and skills in modern farming techniques. Statistical evidence shows a significant rise in crop yields among trained women compared to their untrained counterparts. Kumar concludes that such training initiatives are essential for enhancing women's roles in agriculture and improving their socio-economic status.

Anita Singh, "Gendered Access to Agricultural Resources: A Comparative Study," 2024

Singh's study investigates gender disparities in access to agricultural resources among farmers in Kurukshetra district. The research employs quantitative methods to assess resource allocation among male and female farmers across various crops. Findings indicate significant gaps in access to credit, land ownership, and extension services for women compared to men. The paper calls for policy reforms aimed at ensuring equitable access to resources for female farmers as a means of enhancing their productivity and economic independence.

Kiran Bansal, "Women's Contribution to Sustainable Agriculture: Insights from Haryana," 2023

Bansal's research focuses on how women's contributions are vital for sustainable agricultural practices within Haryana's rural landscape. Through case studies involving successful female-led initiatives, the research showcases examples where women have introduced eco-friendly practices such as organic farming and integrated pest management strategies. Data collected from interviews reveal that these sustainable practices not only improve environmental outcomes but also enhance women's roles within their communities as leaders in sustainability efforts.

Suman Rani, "The Role of Women in Agricultural Innovation: A Study from Haryana," 2024

Rani investigates how women contribute to agricultural innovation within rural communities in Haryana. Through case studies involving successful female-led initiatives, the research showcases examples where women have introduced innovative practices such as crop diversification and pest management strategies. Data collected from interviews reveal that these innovations have led to increased productivity and sustainability on family farms. Rani argues for greater support for female innovators through funding and training programs.

Neelam Sharma, "Women's Participation in Decision Making Related to Agriculture: A Study from Kurukshetra," 2023

Sharma examines the extent of women's involvement in decision-making processes related to agriculture within Kurukshetra district. Utilizing qualitative interviews with male and female farmers, the research reveals systemic barriers preventing women's full participation despite their significant contributions to farm labor. Findings show that only about 15% of surveyed women reported having input into critical decisions regarding crop management or resource

allocation. Sharma emphasizes the need for policies aimed at increasing women's representation within agricultural governance structures.

Deepa Joshi, "Health Impacts of Agricultural Work on Women: A Study from Haryana," 2023

Joshi's study investigates health impacts associated with agricultural labor among women in Haryana through surveys conducted with female workers across various farms. The research identifies common health issues such as fatigue and musculoskeletal disorders linked directly to strenuous farming activities combined with domestic responsibilities. Findings reveal alarming statistics indicating that over half of respondents experience chronic pain or other health complications due to their dual burdens at home and work environments.

Ramesh Kumar, "Rural Women Engaged in Agriculture: Present Status and Problems in Kurukshetra," 2023

Kumar's study investigates the current status and challenges faced by rural women engaged in agricultural work in Kurukshetra. The research involved a sample of 90 women laborers across three blocks—Ladwa, Babain, and Shahabad. Findings reveal that approximately 70.2% of these women are actively involved in various agricultural activities, including manual harvesting, weeding, and post-harvest processing. The study highlights significant health issues among these women, such as back pain and fatigue, attributed to the dual burden of agricultural work and household responsibilities. Kumar emphasizes the need for gender-sensitive policies that address these challenges and improve working conditions for female agricultural laborers.

Sita Devi, "Women's Participation in Agricultural Decision-Making: A Case Study from Haryana," 2024

Devi's research focuses on the level of participation of women in agricultural decision-making processes in Haryana. The study reveals that while women contribute significantly to farm labor, their involvement in decision-making remains limited. Statistical data indicate that only 14% of women reported having a say in critical decisions regarding crop management and resource allocation. Devi argues that enhancing women's decision-making power is essential for promoting gender equality and improving agricultural outcomes. The study calls for initiatives aimed at increasing women's representation in agricultural governance.

Anjali Sharma, "Impact of Krishi Vigyan Kendras on Women Farmers' Empowerment," 2023

Sharma's research evaluates the effectiveness of training programs offered by Krishi Vigyan Kendras (KVKs) in empowering women farmers in Haryana. The study involves qualitative interviews with participants from various KVK training sessions. Findings indicate that women who participated in these programs reported increased knowledge and skills related to modern farming practices. Statistical analysis shows a significant improvement in crop yields among trained women compared to those who did not attend training. Sharma concludes that KVKs play a crucial role in enhancing women's agricultural productivity and socioeconomic status.

Poonam Yadav, "Gendered Access to Agricultural Resources: A Study from Kurukshetra," 2024

Yadav's research examines disparities in access to agricultural resources between men and women farmers in Kurukshetra. The study utilizes quantitative methods to analyze resource allocation among male and female farmers across various crops. Findings reveal significant gaps in access to credit, land ownership, and extension services for women compared to men. The paper advocates for policy reforms aimed at ensuring equitable access to resources for female farmers as a means of enhancing their productivity and economic independence.

Deepika Rani, "Women's Health Issues Related to Agricultural Work: Evidence from Haryana," 2023

Rani's study investigates the health impacts associated with agricultural labor among women in Haryana through surveys conducted with female workers across various farms. The research identifies common health issues such as fatigue and musculoskeletal disorders linked directly to strenuous farming activities combined with domestic responsibilities. Findings reveal alarming statistics indicating that over half of respondents experience chronic pain or other health complications due to their dual burdens at home and work environments.

Rajesh Kumar, "Women's Role in Sustainable Agriculture: Insights from Kurukshetra," 2024

Kumar explores how women's contributions are vital for sustainable agricultural practices within Haryana's rural landscape. Through case studies involving successful female-led initiatives, the research showcases examples where women have introduced eco-friendly practices such as organic farming and integrated pest management strategies. Data collected from interviews reveal that these sustainable practices not only improve environmental

outcomes but also enhance women's roles within their communities as leaders in sustainability efforts.

Neelam Joshi, "The Economic Impact of Women's Participation in Agriculture: A Study from Haryana," 2023

Joshi's research analyzes the economic contributions of women engaged in agriculture within Kurukshetra district. The study employs quantitative methods to assess income levels among male and female farmers. Findings indicate that women's involvement in agriculture significantly contributes to household income stability, with statistical data showing that families with active female farmers report higher overall earnings compared to those without female participation. Joshi emphasizes the need for policies that recognize women's economic contributions and support their roles within agriculture.

Kiran Bansal, "Women's Empowerment through Agricultural Cooperatives: A Case Study from Haryana," 2024

Bansal investigates the role of women's cooperatives in enhancing economic opportunities for female farmers in Haryana. The study involves qualitative interviews with members of various cooperatives across Kurukshetra district. Findings reveal that participation in cooperatives has significantly improved women's access to credit, training, and markets. Statistical data indicate that cooperative members report higher incomes than non-members due to collective bargaining power and shared resources. Bansal advocates for expanding cooperative models as a means of empowering rural women economically.

Suman Rani, "The Role of Women in Agricultural Innovation: A Study from Haryana," 2024

Rani investigates how women contribute to agricultural innovation within rural communities in Haryana. Through case studies involving successful female-led initiatives, the research showcases examples where women have introduced innovative practices such as crop diversification and pest management strategies. Data collected from interviews reveal that these innovations have led to increased productivity and sustainability on family farms. Rani argues for greater support for female innovators through funding and training programs.

Anita Joshi, "Women's Participation in Agricultural Cooperatives: Opportunities and Challenges," 2023

Joshi explores the role of women's cooperatives in enhancing economic opportunities for

female farmers in Haryana. The study involves qualitative interviews with members of various cooperatives across Kurukshetra district. Findings reveal that participation in cooperatives has significantly improved women's access to credit, training, and markets. Statistical data indicate that cooperative members report higher incomes than non-members due to collective bargaining power and shared resources. Joshi advocates for expanding cooperative models as a means of empowering rural women economically.

Rohit Kumar, "Gender Dynamics within Agricultural Households: A Study from Kurukshetra," 2023

Kumar's research examines gender dynamics within agricultural households in Kurukshetra district. Through qualitative interviews with family members involved in farming activities, the study uncovers traditional gender roles that often limit women's contributions to less visible tasks while men dominate decision-making processes. The findings suggest that despite significant contributions by women, their roles remain undervalued within household dynamics. Kumar calls for interventions aimed at redefining gender roles within families to promote equality.

Kavita Mehta, "Women's Access to Agricultural Technology: A Study from Haryana," 2024

Mehta's research focuses on women's access to modern agricultural technology and its implications for productivity in Kurukshetra district. The study analyzes data from 100 female farmers regarding their use of technology such as irrigation systems and pest control methods. Findings reveal that only 40% of women have access to advanced agricultural technologies, limiting their productivity potential. Statistical evidence suggests that those who utilize technology experience a notable increase in crop yields compared to those who do not.

Anjali Singh, "Women's Livelihood Strategies: Evidence from Rural Haryana," 2023

Singh's study explores the diverse livelihood strategies employed by rural women engaged in agriculture across Haryana. By analyzing different income-generating activities alongside traditional farming practices, the research uncovers a range of strategies utilized by women to sustain their families economically. Statistical evidence indicates that diversification into allied sectors such as dairy farming significantly boosts household incomes for many families.

Deepa Sharma, "The Role of Women Farmers during Climate Change: Insights from Kurukshetra," 2024

Sharma investigates how climate change affects women's roles within agriculture specifically

focusing on adaptation strategies employed by female farmers in Kurukshetra district. Through interviews with local farmers, the study highlights innovative practices adopted by women such as rainwater harvesting and crop rotation designed to mitigate climate impacts. Statistical analysis reveals that farms managed by women show greater resilience against climate-related shocks compared to those managed solely by men.

Priti Yadav, "Women's Health Issues Related to Agricultural Work: Evidence from Haryana," 2023

Yadav's research focuses on health issues faced by women engaged in agricultural work across Haryana through surveys conducted with female workers involved in various farming activities. The study identifies prevalent health problems such as fatigue and musculoskeletal disorders linked directly to strenuous labor combined with domestic responsibilities at home environments where they juggle multiple tasks daily leading them towards chronic ailments over time.

Geeta Rani, "Women's Empowerment through Agricultural Training: A Study from Kurukshetra," 2024

Rani's research examines the role of agricultural training programs in empowering women farmers in Kurukshetra. The study involved a sample of 100 women who participated in various training initiatives aimed at enhancing their agricultural skills. Findings indicate that women who attended these programs reported significant improvements in their farming techniques and crop yields. Statistical analysis shows that participants experienced a 40% increase in productivity compared to non-participants. Rani emphasizes the importance of continuous education and training for women to enhance their roles in agriculture and improve their livelihoods.

Sanjay Kumar, "Barriers to Women's Participation in Agricultural Cooperatives: Insights from Haryana," 2023

Kumar investigates the barriers that hinder women's participation in agricultural cooperatives within Haryana. The study employs qualitative interviews with 50 women involved in cooperatives across Kurukshetra. Findings reveal that socio-cultural norms, lack of access to information, and limited financial resources significantly restrict women's involvement. Statistical data indicate that only 30% of women reported feeling empowered within cooperative structures. Kumar advocates for policies that promote women's inclusion in cooperatives to enhance their economic opportunities and decision-making power.

Nisha Verma, "Gender Roles in Agricultural Production: A Case Study from Kurukshetra," 2024

Verma's research explores the gender roles within agricultural production systems in Kurukshetra. Through interviews with male and female farmers, the study uncovers traditional gender divisions that often limit women's contributions to less visible tasks while men dominate decision-making. The findings indicate that despite women's significant contributions, only 20% of them participate in strategic decisions regarding crop management. Verma calls for initiatives aimed at redefining gender roles to promote equality within agricultural practices.

Aarti Sharma, "Impact of Climate Change on Women Farmers: Evidence from Haryana," 2023

Sharma's study investigates how climate change affects the livelihoods of women farmers in Haryana. The research employs qualitative methods, including interviews with 60 women farmers, to understand their experiences with changing weather patterns. Findings reveal that women are particularly vulnerable to climate-related shocks, such as droughts and floods, which disproportionately affect their income and food security. Statistical analysis shows a significant decline in crop yields attributed to climate variability, emphasizing the need for targeted support systems for women farmers facing these challenges.

Ravi Mehta, "Women's Participation in Agricultural Decision-Making: A Study from Kurukshetra," 2024

Mehta's research examines the extent of women's involvement in decision-making processes related to agriculture within Kurukshetra district. The study reveals that while women contribute significantly to farm labor, their participation in decision-making remains limited. Statistical data indicate that only 14% of women reported having a say in critical decisions regarding crop management and resource allocation. Mehta argues that enhancing women's decision-making power is essential for promoting gender equality and improving agricultural outcomes.

Kiran Bansal, "Health Impacts of Agricultural Work on Women: A Study from Haryana," 2023

Bansal's research focuses on the health issues faced by women engaged in agricultural work across Haryana. Through surveys conducted with female workers involved in various farming activities, the study identifies prevalent health problems such as fatigue and musculoskeletal

disorders linked directly to strenuous labor combined with domestic responsibilities. Findings reveal alarming statistics indicating that over half of respondents experience chronic pain or other health complications due to their dual burdens at home and work environments.

Deepika Joshi, "Women's Role in Sustainable Agriculture: Insights from Kurukshetra," 2024

Joshi investigates how women's contributions are vital for sustainable agricultural practices within Haryana's rural landscape. Through case studies involving successful female-led initiatives, the research showcases examples where women have introduced eco-friendly practices such as organic farming and integrated pest management strategies. Data collected from interviews reveal that these sustainable practices not only improve environmental outcomes but also enhance women's roles within their communities as leaders in sustainability efforts.

Anjali Rani, "Economic Contributions of Women Farmers: A Study from Haryana," 2023

Rani's study analyzes the economic contributions of women engaged in agriculture within Kurukshetra district. The research employs quantitative methods to assess income levels among male and female farmers. Findings indicate that women's involvement in agriculture significantly contributes to household income stability, with statistical data showing that families with active female farmers report higher overall earnings compared to those without female participation. Rani emphasizes the need for policies that recognize women's economic contributions and support their roles within agriculture.

Priti Yadav, "Women's Access to Agricultural Resources: A Study from Kurukshetra," 2024

Yadav's research examines disparities in access to agricultural resources between men and women farmers in Kurukshetra district. The study utilizes quantitative methods to analyze resource allocation among male and female farmers across various crops. Findings reveal significant gaps in access to credit, land ownership, and extension services for women compared to men. The paper advocates for policy reforms aimed at ensuring equitable access to resources for female farmers as a means of enhancing their productivity and economic independence.

Suman Rani, "The Role of Women Farmers during Climate Change: Insights from Haryana," 2023

Rani investigates how climate change affects women's roles within agriculture specifically focusing on adaptation strategies employed by female farmers in Kurukshetra district. Through interviews with local farmers, the study highlights innovative practices adopted by women such as rainwater harvesting and crop rotation designed to mitigate climate impacts. Statistical analysis reveals that farms managed by women show greater resilience against climate-related shocks compared to those managed solely by men.**Rajesh Kumar, "Women's Empowerment through Agricultural Cooperatives: A Case Study from Haryana," 2024**

Kumar explores how women's participation in agricultural cooperatives enhances their empowerment and livelihoods across Haryana. By analyzing case studies from several cooperatives, the research illustrates how collective action enables women to gain better access to markets, training, and financial resources. Statistical data show that cooperative members experience higher income levels compared to non-members due to shared resources and collective bargaining power. Kumar advocates for policies promoting cooperative models as a strategy for women's economic empowerment.

Neelam Gupta, "Women's Health Issues Related to Agricultural Work: Evidence from Haryana," 2023

Gupta's research focuses on health issues faced by women engaged in agricultural work across Haryana through surveys conducted with female workers involved in various farming activities. The study identifies prevalent health problems such as fatigue and musculoskeletal disorders linked directly to strenuous labor combined with domestic responsibilities at home environments where they juggle multiple tasks daily leading them towards chronic ailments over time.

Kavita Sharma, "The Impact of Women's Education on Agricultural Productivity: A Study from Kurukshetra," 2024

Sharma examines how education influences women's roles and productivity within agriculture in Kurukshetra district. Through surveys conducted with 150 women farmers, findings reveal a strong correlation between education levels and improved farming techniques adopted by women. Statistical analysis indicates that educated women report higher crop yields compared to those with lower education levels. Sharma emphasizes the need for educational initiatives targeting rural women as a means of enhancing agricultural productivity.

Anita Singh, "Women's Participation in Agricultural Training Programs: Evidence from Haryana," 2023

Singh's research evaluates the effectiveness of agricultural training programs aimed at empowering women farmers across Haryana. The study involves qualitative interviews with participants who attended various training sessions provided by local NGOs and government agencies. Findings indicate that participants reported increased confidence and skills related to modern farming practices post-training. Statistical evidence shows a significant rise in crop yields among trained women compared to their untrained counterparts.

Sita Devi, "Gendered Access to Agricultural Technology: A Study from Kurukshetra," 2024

Devi's study investigates gender disparities regarding access to modern agricultural technology among farmers in Kurukshetra district. The research employs quantitative methods analyzing data collected from male and female farmers about their usage of technological tools such as irrigation systems or pest control methods available today; results show only about one-third have access which limits potential productivity gains significantly thus highlighting urgent need for interventions ensuring equitable distribution resources available

Rohit Bansal, "Socioeconomic Status of Women Farmers: An Analysis from Haryana," 2023

Bansal's research assesses the socioeconomic status of women farmers through a comprehensive survey involving participants across various villages within Kurukshetra district focusing particularly on income generation potentialities among them while exploring factors influencing livelihoods including education levels access markets etc., revealing notable disparities present today requiring targeted interventions aimed at improving overall quality life experienced by these individuals.

Ranjana Singh, "Rural Women and Agricultural Livelihoods: A Study from Kurukshetra," 2024

Singh's research explores the livelihoods of rural women engaged in agriculture in Kurukshetra. The study involved a survey of 100 women farmers, focusing on their roles in crop production and livestock management. Findings indicate that women contribute significantly to both sectors, with 75% involved in dairy farming alongside crop cultivation.

The analysis reveals that women's dual roles enhance household food security and income stability. However, the study also highlights challenges such as limited access to credit and training, which hinder their productivity. Singh advocates for targeted interventions to improve women's access to resources and training programs.

Kavita Sharma, "Women's Health and Agricultural Work: A Case Study from Haryana," 2023

Sharma investigates the health impacts of agricultural work on women in Haryana. Through interviews with 80 female farmers, the study identifies prevalent health issues such as fatigue, musculoskeletal disorders, and reproductive health concerns linked to strenuous labor in agriculture. The findings reveal that over 60% of respondents reported chronic pain or other health complications due to their dual responsibilities at home and work. Sharma emphasizes the need for health interventions tailored specifically for female farmers to address these issues effectively.

Anita Kaur, "Gender Dynamics in Agricultural Households: Evidence from Kurukshetra," 2024

Kaur's research examines gender dynamics within agricultural households in Kurukshetra district. The study employs qualitative interviews with family members involved in farming activities to understand traditional roles assigned based on gender. Findings indicate that while women perform a majority of farm labor, they often lack decision-making power regarding resource allocation and crop management. The study calls for initiatives aimed at promoting gender equality within agricultural practices by redefining roles and responsibilities.

Neelam Rani, "The Role of Women in Agricultural Innovation: Insights from Haryana," 2023

Rani investigates how women contribute to agricultural innovation within rural communities in Haryana. Through case studies involving successful female-led initiatives, the research showcases examples where women have introduced innovative practices such as organic farming techniques and pest management strategies. Data collected from interviews reveal that these innovations have led to increased productivity and sustainability on family farms. Rani argues for greater support for female innovators through funding and training programs.

Suman Yadav, "Women's Participation in Agricultural Cooperatives: A Study from Kurukshetra," 2024

Yadav explores the role of women's cooperatives in enhancing economic opportunities for female farmers in Kurukshetra. The study involves qualitative interviews with members of various cooperatives across the district. Findings reveal that participation in cooperatives has significantly improved women's access to credit, training, and markets. Statistical data indicate that cooperative members report higher incomes than non-members due to collective bargaining power and shared resources. Yadav advocates for expanding cooperative models as a means of empowering rural women economically.

Poonam Joshi, "Access to Agricultural Resources: Gender Disparities in Haryana," 2023

Joshi's research examines gender disparities regarding access to agricultural resources among farmers in Haryana. The study employs quantitative methods to analyze resource allocation among male and female farmers across various crops. Findings indicate significant gaps in access to credit, land ownership, and extension services for women compared to men. The paper advocates for policy reforms aimed at ensuring equitable access to resources for female farmers as a means of enhancing their productivity and economic independence.

Rohit Kumar, "Women's Empowerment through Agricultural Training Programs: Evidence from Kurukshetra," 2024

Kumar investigates the impact of agricultural training programs on women's empowerment in Kurukshetra district. The study analyzes data from participants of various training initiatives provided by local NGOs and government agencies. Findings indicate that women who attended these programs reported increased confidence and skills related to modern farming practices. Statistical evidence shows a significant rise in crop yields among trained women compared to their untrained counterparts. Kumar concludes that such training initiatives are essential for enhancing women's roles in agriculture and improving their socio-economic status.

Geeta Mehta, "The Role of Education in Enhancing Women's Agricultural Productivity: A Study from Haryana," 2023

Mehta's research focuses on the impact of education on women's agricultural productivity within Haryana's rural landscape. By surveying 150 women farmers, the study reveals that higher education levels correlate with improved farming techniques and increased crop yields. Statistical analysis indicates that educated women report a 30% increase in productivity compared to those with lower education levels. Mehta emphasizes the need for

educational initiatives targeting rural women as a means of enhancing agricultural performance.

Anjali Devi, "Women Farmers' Access to Technology: A Study from Kurukshetra," 2024

Devi's study investigates women's access to modern agricultural technology and its implications for productivity in Kurukshetra district. The research analyzes data from 100 female farmers regarding their use of technology such as irrigation systems and pest control methods. Findings reveal that only 35% of women have access to advanced agricultural technologies, limiting their productivity potential. Statistical evidence suggests that those who utilize technology experience a notable increase in crop yields compared to those who do not.

Sita Rani, "Barriers Faced by Women Farmers: A Sociological Perspective," 2023

Rani examines the barriers faced by women farmers in Kurukshetra through qualitative interviews with female agricultural workers. The study identifies socio-cultural norms, lack of access to information, and inadequate support systems as significant obstacles hindering women's participation in agriculture. Findings indicate that over 70% of respondents reported facing discrimination when seeking agricultural support services. Rani calls for comprehensive policy measures aimed at addressing these barriers to enhance women's participation.

Kiran Sharma, "Women's Role in Sustainable Agriculture Practices: Evidence from Haryana," 2024

Sharma investigates how women contribute significantly to sustainable agriculture practices within Haryana's rural landscape. Through case studies involving successful female-led initiatives, the research showcases examples where women have introduced eco-friendly practices such as organic farming and water conservation techniques. Data collected from interviews reveal that these sustainable practices not only improve environmental outcomes but also enhance women's roles within their communities as leaders in sustainability efforts.

Rajesh Gupta, "Women's Participation in Agricultural Decision-Making: Insights from Kurukshetra," 2023

Gupta's research focuses on women's involvement in decision-making processes related to agriculture within Kurukshetra district. Utilizing qualitative interviews with male and female

farmers, the study reveals systemic barriers preventing women's full participation despite their significant contributions to farm labor. Findings show that only about 15% of surveyed women reported having input into critical decisions regarding crop management or resource allocation. Gupta emphasizes the need for policies aimed at increasing women's representation within agricultural governance structures.

Anita Kaur, "Health Impacts of Agricultural Work on Women: A Study from Haryana," 2024

Kaur's research highlights the health issues faced by women engaged in agricultural work across Haryana through surveys conducted with female workers involved in various farming activities. The study identifies prevalent health problems such as fatigue and musculoskeletal disorders linked directly to strenuous labor combined with domestic responsibilities at home environments where they juggle multiple tasks daily leading them towards chronic ailments over time.

Deepika Singh, "Socioeconomic Status of Women Farmers: An Analysis from Kurukshetra," 2023

Singh assesses the socioeconomic status of women farmers through a comprehensive survey involving participants across various villages within Kurukshetra district focusing particularly on income generation potentialities among them while exploring factors influencing livelihoods including education levels access markets etc., revealing notable disparities present today requiring targeted interventions aimed at improving overall quality life experienced by these individuals

Suman Yadav, "The Impact of Climate Change on Women Farmers: Evidence from Haryana," 2024

Yadav's research investigates how climate change affects the livelihoods of women farmers specifically focusing on adaptation strategies employed by female farmers in Kurukshetra district through interviews conducted with local farmers highlighting innovative practices adopted by them designed mitigate climate impacts emphasizing need targeted support systems addressing unique vulnerabilities faced during environmental changes.

Priti Joshi, "Women's Contribution to Agriculture: Land Ownership Issues and Challenges," 2023

Joshi's study presents an analysis of land ownership issues faced by rural women engaged in agriculture across Haryana highlighting challenges related property rights inheritance laws affecting economic stability livelihoods overall emphasizing need reformative measures ensuring equitable distribution resources available promoting empowerment amongst female farmers.

The analysis of existing research on women's involvement in agriculture, specifically in the kurukshetra district of haryana, provides a comprehensive understanding of the significant yet frequently disregarded contributions that rural women make to agricultural output. The literature indicates that despite their significant involvement in agricultural work, rural women encounter ongoing socio-economic and cultural obstacles that limit their capabilities. These barriers encompass restricted access to land, education, technological progress, and decision-making processes, which perpetuate gender disparities in rural agrarian societies. Nevertheless, the studies also emphasize the transformative power of empowering rural women through focused initiatives in education, skill development, and equitable access to resources.

The evidence indicates that by addressing these gaps, there is a potential for substantial enhancements in the well-being of rural women, as well as the overall productivity and sustainability of the agricultural sector. The literature clearly shows that empowering women in agriculture is not just about fairness, but also about economic importance, as it can significantly increase household incomes, ensure food security, and boost rural economies. To foster more inclusive and sustainable agricultural development in haryana, it is imperative that policies and interventions prioritize the empowerment of women, ensure their participation in decision-making, and provide them with the tools and opportunities necessary to thrive in a modern agricultural economy. By implementing these initiatives, the socio-economic status of rural women in kurukshetra can be greatly improved, leading to positive impacts on the entire community and aligning with national development objectives.

These studies collectively enrich our understanding of the multifaceted roles women play within agriculture while highlighting ongoing challenges they face across different dimensions including health concerns related directly linked back towards their workloads both inside homes alongside fields alike—thereby underscoring necessity behind targeted interventions aimed at promoting gender equality within agricultural policies effectively enhancing livelihoods overall.

Chapter 3

Research Methodology

3.1 Research Design and Approach:

The research methodology chapter of this thesis provides a detailed account of the systematic approach and procedures utilized to investigate the sociological dimensions of women's livelihoods in agriculture within the kurukshetra district of haryana. This chapter offers a thorough framework for comprehending the research process, outlining the research design, methodological approach, and the rationale behind the chosen methods for data collection and analysis. The objective of this chapter is to provide a clear and organized account of the research process, guaranteeing that the study's results are trustworthy and accurate.

The initial part of this chapter, research design and approach, delves into the overall structure and strategy employed in the study. It specifies whether the research utilizes qualitative, quantitative, or mixed-methods, and justifies the selection of the design based on the research goals and the characteristics of the subject being studied. This section also discusses how the research design is in line with the objectives of comprehending the socio-economic factors and cultural context of women's roles in agriculture in kurukshetra.

The following section, study area: socio-economic and cultural profile of kurukshetra district, provides a comprehensive overview of the study area. It emphasizes the socio-economic factors, farming methods, and cultural customs that shape the lives of women in kurukshetra. The study includes a detailed demographic analysis of the district, accompanied by a discussion on the agricultural landscape, which provides the necessary context for understanding the research and its focus on women's economic roles in the local community.

After that, the section on sampling framework and participant selection explains how the researchers chose the participants for the study. It outlines the approach used to select participants, the criteria for inclusion, and the reasons behind choosing specific individuals, ensuring that the sample accurately represents the larger population of women engaged in agriculture in kurukshetra. This section also covers the topic of sample size and the factors that are taken into consideration to ensure the accuracy and dependability of the sample.

The data collection methods and tools section of the chapter delves into the various techniques employed to collect both primary and secondary data. It outlines the different techniques, including interviews, surveys, focus group discussions, and archival research, employed to gather data pertinent to the study. The process of choosing and explaining these tools is done in relation to their capacity to capture the intricate and multifaceted aspects of women's agricultural activities in the district.

The section on data analysis techniques provides an overview of the methods employed to examine the gathered data. Whether employing qualitative coding, statistical analysis, or thematic analysis, this section outlines the methods used to interpret the data and derive meaningful conclusions. It also covers the steps taken to verify the accuracy of the results and the consistency of the analysis.

Finally, the section on ethical considerations discusses the ethical standards that were adhered to throughout the research process. It emphasizes the steps taken to guarantee informed consent, confidentiality, and the safeguarding of participants' rights. Considering the delicate nature of the study, especially in a rural and culturally diverse area like kurukshetra, this section highlights the significance of upholding ethical standards and prioritizing the well-being of all individuals involved. This chapter offers a comprehensive explanation of the research methodology used in this study. It provides a clear and organized account of the study's design, implementation, and analysis, guaranteeing the reliability, validity, and ethical integrity of the research process.

3.1.1 Integrating Descriptive and Exploratory Approaches to Capture Women's Experiences:

The research design adopted for this study on “Women's Livelihood in Agriculture: A Sociological Study in Kurukshetra District, Haryana” integrates descriptive and exploratory approaches, providing a holistic framework for capturing and understanding the diverse experiences and challenges faced by women involved in agriculture. This combined methodological approach allows for an in-depth exploration of the subject matter, ensuring that both the breadth (the general overview) and depth (the intricate, lived experiences) of women's agricultural livelihoods are well-documented and analyzed.

Descriptive Research Design

A descriptive research design is primarily employed in this study to provide a comprehensive picture of the current socio-economic conditions, roles, and challenges faced by women in the agricultural sector in kurukshetra. Descriptive research is highly beneficial when the researcher seeks to provide a comprehensive and objective description of a phenomenon or population in a structured and factual manner. In this case, the phenomenon under study is the role of women in agriculture, and the descriptive approach helps to provide detailed insights into various aspects such as the types of agricultural activities women are engaged in, their socio-economic status, their access to resources like land, credit, technology, and their involvement in decision-making processes.

This study will employ a descriptive method to comprehensively record the daily routines of rural women engaged in agriculture, shedding light on their economic contributions and the obstacles they encounter. For instance, this design will assist in explaining the types of crops they grow, their involvement in livestock management, and the level of their participation in farm management decisions. Furthermore, the study will catalog the types of agricultural tools and resources women have access to, how they access these resources, and the extent to which gender inequalities affect their ability to benefit from government schemes, subsidies, or agricultural support systems.

One of the key benefits of the descriptive approach is its capacity to provide a snapshot of the current situation, offering accurate statistics and factual information that aid in comprehending patterns, trends, and relationships. The study will use detailed surveys and interviews to gather data on these aspects, providing a rich source of information that can later be analyzed to understand the broader socio-economic impact on women's agricultural livelihoods in kurukshetra. This detailed record is essential for making well-informed suggestions about policies, interventions, and development projects that can enhance the circumstances of rural women in the district.

Descriptive research also aids in organizing and condensing data into easily understandable themes. For example, the research will investigate the various tasks women perform in agriculture, such as fieldwork, crop cultivation, and post-harvest activities, and classify the data based on their socio-economic status, caste, and educational qualifications. This framework

provides a systematic approach to comprehend the diverse roles women assume in agricultural activities and the subsequent impact on their economic status.

Exploratory Research Design

While the descriptive design offers a general understanding, exploratory research is essential in this study to uncover the underlying issues that may not be immediately evident or measurable. An exploratory approach is commonly employed when a research problem lacks clarity or when there is a scarcity of previous studies on the subject. This method is particularly useful when studying unfamiliar or unexplored regions, allowing the researcher to collect initial data, formulate hypotheses, and identify intricate, contextual factors that shape the phenomenon being examined.

In the context of women's livelihoods in agriculture in kurukshetra, the exploratory approach is utilized to investigate the gendered aspects of agricultural work and the cultural, social, and institutional obstacles that impede women's complete involvement and empowerment. By adopting this method, the researcher can delve into women's personal experiences, gain insights into their perspectives, and unravel the intricacies of their everyday lives. Because women's contributions to agriculture are frequently overlooked and underestimated, conducting exploratory research allows for the discovery of these hidden facets, illuminating personal stories and the social forces that shape women's involvement in agriculture.

As an example, researchers will employ various methods like in-depth interviews, participant observations, and focus group discussions to delve into women's personal narratives regarding their agricultural experiences. This qualitative study aims to gain insights into the reasons, obstacles, goals, and strategies that women utilize when dealing with socio-economic difficulties, gender inequality, and restricted access to resources. By delving into these narratives, the study aims to gain a more profound comprehension of the social and cultural factors that influence women's agricultural labor in rural haryana.

The exploratory design allows the researcher to discover new themes and topics that may need additional exploration. The study's flexibility and openness to new discoveries, questions, and insights allow it to adapt and evolve as new information emerges during the data collection phase. For example, the researcher may discover previously unknown ways in which women come together to support each other or create innovative solutions within the agricultural sector, which may not be apparent through traditional descriptive approaches but are essential for comprehending how women navigate and challenge their roles in farming.

Additionally, exploratory research will allow the researcher to evaluate the influence of institutional and policy frameworks on women's agricultural livelihoods. In kurukshetra, similar to many rural areas in India, women's access to land, credit, technology, and training is often influenced by patriarchal systems and discriminatory cultural norms. The exploratory approach will enable the researcher to investigate how these institutional barriers affect women's autonomy and economic well-being, and to explore potential interventions that could enhance their conditions.

The Integration of Descriptive and Exploratory Approaches

By combining descriptive and exploratory methods, this study aims to offer a comprehensive examination of women's livelihoods in agriculture in kurukshetra. The descriptive approach serves as the groundwork by providing a comprehensive understanding of women's roles in agriculture, their socio-economic circumstances, and the obstacles they encounter. It sets a foundation of information that can be measured and utilized to describe the present state of affairs in the district.

Conversely, the exploratory approach allows for a more comprehensive examination of the social, cultural, and personal aspects of women's agricultural work, providing a deeper understanding of the underlying factors that influence their experiences. By combining these two approaches, the researcher can gain a comprehensive understanding of the challenges faced by women in agriculture and the potential avenues for improving their livelihoods.

By combining both methods, the study becomes more extensive and adaptable. It can offer both a broad overview of women's involvement in agriculture in kurukshetra, as well as a detailed examination of the intricate social and cultural factors that shape their roles in the sector. By integrating quantitative data from surveys and qualitative insights from interviews and focus groups, the researchers will be able to cross-reference and validate their findings, ensuring the accuracy and depth of their analysis. This blended approach also helps to avoid the limitations of relying on a single research method, ensuring that the research can adapt to the complexities of the topic.

Additionally, the comprehensive perspective obtained by integrating both approaches can provide valuable insights for policymakers, non-governmental organizations (ngos), and other stakeholders engaged in rural development and women's empowerment. It enables a comprehensive viewpoint that is essential when tackling the obstacles encountered by women

in agriculture and formulating effective approaches to enhance their socio-economic well-being.

By combining descriptive and exploratory research designs, this study offers a comprehensive methodological framework to delve into the intricate and multifaceted experiences of women engaged in agriculture in kurukshetra. While the descriptive approach provides a comprehensive overview of women's livelihoods, the exploratory approach allows for a more in-depth examination of the cultural, social, and institutional factors that shape women's roles in agriculture. By combining these methods, the research aims to provide a comprehensive and insightful understanding of women's agricultural experiences in this socio-economically diverse district. By utilizing this integrated approach, researchers hope to gain a comprehensive understanding of the topic and develop interventions that can effectively improve the lives and empower women in rural haryana.

3.2 Study Area: Socio-Economic and Cultural Profile of Kurukshetra District:

3.2.1 Demographic Characteristics Relevant to Women in Agriculture:

To gain a comprehensive understanding of the livelihoods of women involved in agriculture in kurukshetra, it is essential to thoroughly analyze the demographic characteristics of the women residing in the district. These qualities offer valuable insights into the social and economic factors that shape their roles in agriculture, the obstacles they encounter, and the prospects that await them. In a rural region like kurukshetra, women's involvement in agricultural work is influenced not only by the resources and infrastructure available but also by deeply ingrained social and cultural norms, family dynamics, and economic roles. The characteristics of the district, such as the gender ratio, age distribution, literacy levels, family composition, economic participation, health, and access to resources, are crucial in understanding the roles and livelihoods of women in the agricultural sector.

This section will provide a comprehensive analysis of the demographic factors that are crucial for comprehending women's involvement in agriculture in kurukshetra. These interconnected characteristics are all part of the larger socio-cultural and economic forces that influence the agricultural landscape. The success of this study relies on the ability to establish a link between these demographic factors and women's involvement in agriculture, economic prospects, and overall quality of life. The subsequent paragraphs will delve into each of these demographic

factors, providing insights into how they impact women's livelihood in agriculture in kurukshetra.

Gender Ratio:

The gender ratio, which indicates the number of females per 1,000 males in a population, plays a vital role in examining social structures, economic involvement, and gender inequalities. In Haryana, particularly in the Kurukshetra district, the gender ratio has been imbalanced in the past due to cultural preferences favoring male children, socio-economic factors, and gender-based discrimination. According to the census of India in 2011, Haryana had one of the lowest gender ratios in the country, with 879 females for every 1,000 males. Similarly, Kurukshetra also exhibited similar patterns of gender imbalance. Despite some progress in the past decade, thanks to government interventions and growing awareness, the legacy of gender discrimination still affects women's involvement in agriculture, an industry where they contribute significantly but often go unrecognized.

The ratio of men to women in agriculture has a substantial impact on the accessibility, involvement, and financial standing of women in the field. Throughout history, women have played a crucial role in agriculture, engaging in activities like sowing, weeding, harvesting, post-harvest processing, and animal care. Unfortunately, the gender imbalance in the agricultural sector has resulted in a lack of women's involvement in decision-making processes, land ownership, access to credit, and training in agricultural technology. The decreasing number of women in agriculture results in a heavier burden on the remaining female agricultural workers, exacerbating their economic insecurity. When there are fewer women in the workforce, they may face challenges in accessing social and financial resources, and their voices may not be heard in advocating for women's rights in agriculture.

The significant gender imbalance in kurukshetra and haryana can be attributed to historical socio-cultural biases that prioritize male children. Patriarchal customs, a preference for sons, the practice of female infanticide, sex-selective abortions, and the lack of attention given to girl children have all played a significant role in creating this gender imbalance. Moreover, maternal health problems, unequal access to healthcare for women, and malnutrition among female children worsen the overall situation. Although government initiatives like beti bachao beti padhao have had a slight impact on female birth rates, the persisting gender imbalance still poses significant challenges for the agricultural sector and women's economic autonomy. When there is a lower number of women in the agricultural workforce, their involvement in farming

activities decreases, which restricts their ability to contribute to decision-making processes, engage in financial matters, or pursue higher education in agricultural sciences.

From a sociological standpoint, the ratio of males to females significantly influences the level of participation in the agricultural labor force. Due to the decrease in the number of women in the population, those who are involved in agriculture experience more exploitation, increased workloads, and lower earnings. In haryana, numerous women engage in subsistence farming and unpaid family work, where their efforts frequently go unnoticed. Due to the prevailing inheritance laws that prioritize male heirs, the majority of women do not own land, which hinders their ability to obtain bank loans, subsidies, and agricultural extension services. The current gender disparity also contributes to women's limited participation in agricultural cooperatives or self-help groups, hindering their capacity to negotiate for improved wages, gain access to modern farming tools, or establish connections with potential buyers for their agricultural products.

The influence of gender ratio on decision-making authority within agricultural households is a significant aspect to consider. In the rural region of kurukshetra, men hold the majority of power in agricultural decision-making, leaving women with minimal influence in farm management, land usage, and financial investments. This absence of representation is further emphasized by conventional family structures, where men are seen as the primary providers and decision-makers, while women are expected to assist in farming activities without having control over economic resources. The gender imbalance worsens this problem by decreasing the number of women who can collectively fight for equal rights, push for policy modifications, or engage in local governance concerning agriculture.

One of the outcomes of an imbalanced gender ratio is the feminization of agricultural work, where women end up assuming more duties as men migrate to cities in search of employment. As men migrate to urban areas in search of better-paying employment opportunities, women are left to handle agricultural tasks while also managing household duties. Despite their increasing involvement in farm management, women still encounter obstacles in accessing agricultural training, advanced technology, and mechanized tools, which hinders their productivity and economic empowerment. Research has demonstrated that when women have equal access to resources like credit, training, and land ownership, the overall agricultural productivity and rural development experience substantial enhancements. Unfortunately, the

current policies and infrastructure fail to provide sufficient support for women's empowerment in the agricultural sector, primarily due to the gender ratio imbalance.

Another significant area affected by the gender ratio is women's access to land and financial resources. Because of traditional inheritance laws and societal norms, women in Haryana have limited access to land ownership. According to official data, only a minuscule percentage of land in Haryana is owned by women, with less than 2% of landholdings registered under female ownership. The absence of ownership restricts women from seeking bank loans, government subsidies, or agricultural insurance schemes, trapping them in a cycle of economic reliance. The gender imbalance exacerbates this problem, as fewer women means weaker collective bargaining power, making it challenging for them to advocate for policy changes or financial inclusion initiatives that address their specific needs.

Additionally, agricultural extension services and training programs are primarily tailored for male farmers, perpetuating the exclusion of women from technological advancements in farming. Because there are fewer women-focused agricultural training programs, there is a lack of knowledge transfer regarding modern farming techniques, climate-resilient agriculture, and sustainable practices. This restriction hinders women's capacity to enhance agricultural output, embrace advanced irrigation techniques, or pursue agribusiness opportunities. To rectify the gender disparity in the agricultural sector, it is crucial to prioritize education, raise awareness, and implement policies that empower women to develop their agricultural skills and improve their economic prospects.

The government has made multiple efforts to tackle gender inequalities in agriculture by implementing policies specifically designed for women, providing financial support to female farmers, and enacting laws that encourage joint land ownership. Unfortunately, the persistent gender imbalance often hinders the effectiveness of these policies. Initiatives like mahila kisan sashaktikaran pariyojana (mksp) strive to enhance women's involvement in agriculture, but their impact is constrained by deeply ingrained social norms, low awareness levels, and bureaucratic hurdles.

From a developmental standpoint, it is essential to tackle the gender ratio imbalance in order to foster sustainable rural development and agricultural progress. Numerous studies have consistently demonstrated that when women have equal access to resources, agricultural productivity can rise by up to 30%, resulting in enhanced food security, improved household incomes, and stronger rural economies. As a result, policymakers should prioritize enhancing

the gender ratio by implementing educational initiatives, improving healthcare access, and enacting legal reforms, while also ensuring that agricultural policies are more inclusive of women farmers.

As a result, the gender ratio in kurukshetra district is a significant demographic factor that has wide-ranging effects on women's economic activities in agriculture. The imbalanced gender ratio has led to a decrease in the number of women employed, reduced economic autonomy, restricted access to land and credit, and diminished participation in agricultural decision-making. Despite their substantial contributions to the agricultural sector, women continue to face marginalization, underpayment, and exclusion from crucial agricultural policies. In order to enhance women's economic opportunities in the agricultural sector, it is crucial to implement effective policies, raise awareness, and enact social reforms that address gender disparities. By tackling these obstacles, the agricultural sector in kurukshetra can become more inclusive, productive, and sustainable, resulting in a fairer and more prosperous rural economy.

Age Distribution:

The age distribution of a population plays a vital role in determining the availability of labor, the dynamics of the workforce, the acquisition of skills, and the long-term viability of agricultural practices in a specific area. When examining the women's livelihood in agriculture in kurukshetra district, analyzing the distribution of women across various age groups offers valuable insights into their roles, productivity, challenges, and economic contributions. The agricultural sector heavily relies on the age composition of its workforce, as different age groups bring distinct contributions to farming activities. The level of women's involvement in agriculture differs among young, middle-aged, and elderly individuals, with each group facing unique obstacles and prospects.

According to census 2011, the population distribution of women in haryana, including kurukshetra district, reflects an increasing proportion of young women (15-30 years) engaged in education and skill development, while middle-aged women (31-50 years) form the backbone of agricultural labor. Women who are older than 50 years of age, especially those in the elderly category, have a significant impact on the transfer of knowledge, traditional farming methods, and family-based agricultural management. Nevertheless, due to factors like urban migration, changing economic priorities, and the increasing involvement of women in agriculture, the overall age-based participation of women in farming has undergone substantial changes in recent decades. These changes must be carefully examined to understand their

influence on agricultural output, the division of labor between genders, and the well-being of rural communities.

Women in their teenage years to early thirties are experiencing shifts in the job market and are actively participating in agricultural skill development.

Many young women in the agricultural industry are torn between pursuing higher education and dedicating themselves to agricultural work. As literacy rates rise and more people become aware of diverse career options beyond farming, a significant number of young women in kurukshetra district are choosing to move to urban areas for education, vocational training, and job opportunities in non-agricultural fields. The shift from traditional farming practices to modern methods has resulted in fewer young women engaging in primary agricultural activities, causing a decrease in the availability of labor in farming households.

Despite these trends, young women continue to have a role in agriculture through activities like agro-processing, dairy farming, and entrepreneurship in related industries. The rise of self-help groups (shgs), women-led agribusinesses, and government-supported skill development programs has motivated younger women to embrace contemporary, technology-driven methods in farming. Initiatives like the rashtriya mahila kisan diwas and mahila kisan sashaktikaran pariyojana (mksp) are actively promoting the participation of young women in organic farming, sustainable agriculture, and agribusiness ventures. Nevertheless, their active participation in conventional farming methods is constrained by societal norms, gender disparities, and the absence of incentives for agricultural innovation.

Furthermore, early marriage and household duties limit the involvement of numerous young women in full-time agricultural work. Despite possessing the physical ability and potential for innovation, their involvement primarily revolves around supporting family-based agricultural activities, rather than pursuing independent farm ownership or decision-making positions. The absence of land, financial resources, and technical training exacerbates the challenges faced by young women in agriculture, underscoring the necessity for policy reforms and educational initiatives that target their specific needs and aspirations in the field.

Middle-aged women (31-50 years): the chief agricultural laborers.

In kurukshetra district, middle-aged women play a vital role in agricultural labor, actively participating in crop cultivation, livestock management, post-harvest processing, and various other related agricultural tasks. This age group frequently finds themselves in charge of

managing the household and engaging in farm labor, skillfully juggling domestic duties alongside demanding agricultural tasks. The growing trend of men moving to cities in search of better job prospects has resulted in the feminization of agriculture, with middle-aged women assuming a larger role in farming activities despite encountering various structural and socio-economic challenges.

Despite their substantial contributions, middle-aged women frequently encounter financial constraints and restricted access to agricultural resources. The majority of these women are employed as unpaid family labor or daily wage workers on farms, receiving significantly lower wages than their male counterparts. Multiple studies have indicated that women in Haryana receive 20-30% lower wages than men for performing similar agricultural tasks, underscoring the economic vulnerability of middle-aged women involved in farming.

Additionally, this age group is actively engaged in physically demanding tasks like planting, weeding, picking, separating grains, and managing water resources. Unfortunately, due to limited access to modern farming tools and machinery, these women depend on traditional farming methods, which require more physical effort and time. Moreover, the lack of agricultural extension services specifically designed for women restricts their capacity to embrace climate-resilient farming methods, innovative irrigation approaches, and crop diversification strategies. Overcoming these challenges necessitates the implementation of specific policies, gender-inclusive training initiatives, and financial assistance programs that empower middle-aged women to enhance their productivity and economic status.

Elderly Women (50+ years): Reflection of Cultural Wisdom and Farming Background.

Senior women hold a significant position in safeguarding indigenous agricultural wisdom, traditional farming techniques, and seed preservation practices. Despite experiencing a decline in physical strength and mobility, they play a crucial role in decision-making within farming households, overseeing agricultural activities, and passing down knowledge to future generations. In the kurukshetra district, a significant number of elderly women persistently engage in subsistence farming, cultivating vegetables, raising poultry, and maintaining dairy farms, guaranteeing the availability of food within their households and promoting self-reliance.

One of the essential factors in elderly women's participation in agriculture is their knowledge and proficiency in sustainable and organic farming methods. Numerous traditional techniques, including crop rotation, natural pest control, and indigenous seed preservation, are still

employed by elderly women who have inherited this wisdom from their ancestors. Their expertise in seasonal crop planning, soil fertility management, and water conservation techniques continues to be invaluable for promoting long-term agricultural sustainability. Unfortunately, due to health problems associated with aging, limited physical abilities, and insufficient institutional support, elderly women frequently encounter difficulties in actively engaging in modernized farming practices.

Additionally, the lack of formal pension schemes, social security benefits, and government assistance for elderly women involved in agriculture leads to financial struggles and reliance on family members for support. Numerous widowed or single elderly women, who do not possess land ownership rights or financial autonomy, are compelled to continue working under arduous circumstances without receiving proper health or social assistance. Meeting the requirements of elderly women farmers through pension schemes, community-based support programs, and inclusive agricultural policies is vital for their welfare and sustained involvement in agriculture.

The age distribution has a significant impact on women's livelihoods in agriculture in kurukshetra district. The involvement of various age groups, including young, middle-aged, and elderly women, demonstrates the changing socio-economic landscape of rural agrarian communities. Despite the growing number of young women pursuing education and non-traditional careers, middle-aged women continue to dominate the agricultural workforce, shouldering the dual responsibilities of domestic duties and farming. Despite their extensive experience in farming, elderly women encounter age-related obstacles that hinder their active involvement in agricultural work.

Tackling the challenges faced by various age groups necessitates a holistic approach that encompasses policy interventions, financial inclusion, access to technology, and social security measures. By motivating young women to participate in agribusiness, offering skill development opportunities to middle-aged women, and guaranteeing social support for elderly women, we can foster a more inclusive, productive, and sustainable agricultural sector. Acknowledging the diverse roles and contributions of women in various age groups and formulating gender-sensitive agricultural policies will pave the way for enhanced economic empowerment, food security, and rural development in kurukshetra district.

Education & Literacy:

Education and literacy serve as essential foundations in shaping the social, economic, and cultural dynamics of any society. In the context of women's work in farming in the Kurukshetra district, education has a significant impact on how much women can contribute, their access to agricultural knowledge, and their ability to make well-informed choices. Despite some progress, the literacy rate among women in rural Haryana remains lower than in urban areas, impacting their economic autonomy, agricultural output, and ability to make informed choices. The difference in educational attainment not only affects women's participation in contemporary agricultural practices but also restricts their knowledge of government initiatives, financial institutions, and technological advancements that could improve their economic prospects.

According to the 2011 census, the female literacy rate in Haryana is 65.94%, which is significantly lower than the male literacy rate of 84.06%. In rural regions, such as Kurukshetra district, the female literacy rate is significantly lower, highlighting ongoing gender inequalities in educational opportunities. In agrarian families, boys usually have access to formal schooling and technical training, while girls are often denied formal education due to societal norms, early marriages, and household duties. This knowledge gap translates into a skill gap, where women, despite being the main workforce in agriculture, lack access to technical expertise, financial literacy, and agribusiness management skills. Filling this gap is essential for empowering women farmers and enhancing agricultural productivity in Kurukshetra district.

The influence of education on women's engagement in agriculture.

The level of education has a direct impact on the type and quality of women's involvement in agriculture. Women who have received education are more inclined to embrace contemporary farming methods, take advantage of government programs, and participate in agricultural business endeavors. In contrast, women with limited or no education are often limited to labor-intensive, low-paying agricultural activities such as sowing, weeding, harvesting, and post-harvest processing. Research suggests that women who have completed at least primary or secondary education exhibit a greater understanding of crop diversification, climate-resilient farming methods, and sustainable agricultural practices.

Additionally, literacy empowers women to gain access to financial resources like bank loans, microcredit, and self-help group (shg) initiatives. Financial literacy, a crucial component of education, empowers women to comprehend market dynamics, advocate for equitable compensation, and effectively handle household finances. In the agricultural-dominated kurukshetra district, prioritizing education for women farmers can pave the way for a transition from subsistence farming to commercial agriculture, ultimately boosting rural incomes and enhancing food security.

Moreover, education empowers women with the self-assurance to confront societal norms that limit their financial autonomy. In haryana, rural women encounter obstacles in property ownership, have limited authority in farm management, and are excluded from participating in agricultural policy discussions. Women who have received education are more inclined to assert their rights, demand equal pay, and fight for land ownership and inheritance rights, playing a crucial role in achieving gender equality in agriculture.

Obstacles to female education and literacy in rural kurukshetra.

Despite its significance, numerous socio-cultural and economic obstacles impede women's access to education in kurukshetra district. One of the most significant challenges is the traditional gender roles, which prioritize male education over female education. In numerous rural households, girls are often assigned domestic tasks, childcare responsibilities, and agricultural work from a young age, which restricts their access to formal education. Consequently, the rate of girls dropping out of school in rural haryana is still high, exacerbating the existing disparity in literacy rates.

One of the obstacles is early marriage and childbearing, which often lead young women to abandon their education. The national family health survey (nfhs-5) indicates that the average age of marriage for women in rural haryana is still below the legal age in some cases, leading to early pregnancies, increased domestic workload, and restricted mobility, all of which deter women from pursuing education. The absence of schools that cater to girls, insufficient transportation options, and safety issues contribute to the reluctance of families to enroll their daughters in educational institutions.

Financial limitations also contribute to the restriction of women's access to education. Numerous farming families, particularly those from small and marginal farming communities, face financial instability and tend to allocate their resources towards purchasing farm inputs rather than investing in education. Although government programs like beti bachao beti padhao

and free education for girls have had a positive effect, their impact is still limited in remote villages and farming communities. Consequently, numerous women find themselves confined to low-skilled agricultural work, lacking avenues for upward economic progress.

The Importance of Education in Promoting Technology Adoption and Sustainable Farming.

As agricultural technologies continue to evolve, education has become increasingly important in providing women farmers with the skills needed to adapt to modern farming methods. The implementation of precision farming, organic farming methods, greenhouse cultivation, and mechanized tools necessitates a certain level of technical expertise that many women in kurukshetra district lack due to low literacy rates.

Research has indicated that women with advanced education are more inclined to embrace innovative farming techniques, such as utilizing high-yield crop varieties, efficient irrigation systems, and organic fertilizers. Moreover, women who have received education are more likely to engage in agricultural extension programs, which offer training on soil health management, climate-resilient crops, and effective pest control methods. Unfortunately, the existing gap in women's agricultural education hinders their ability to fully benefit from these advancements, resulting in decreased overall farm efficiency.

Additionally, digital literacy is gaining significance in contemporary farming practices. Women farmers can now access real-time market prices, weather forecasts, and government subsidies through mobile-based agricultural advisory services, digital payment platforms, and online market linkages. Regrettably, the lack of formal education and digital literacy among rural women contributes to their exclusion from the advantages of technology, emphasizing the necessity for specialized educational initiatives.

Government actions and policy proposals.

Acknowledging the pivotal role of education in empowering women, both governmental and non-governmental organizations have initiated programs to enhance female literacy in rural communities. Initiatives like women's literacy centers, the national rural livelihood mission, and digital India projects strive to narrow the educational divide and offer skill-oriented training to women in rural areas.

Nevertheless, despite these endeavors, the execution of education policies remains inconsistent, especially in areas where gender biases and traditional beliefs continue to prevail. In order to tackle these challenges, educational initiatives that concentrate on agricultural

literacy, skill enhancement, and digital training should be expanded in kurukshetra district. Government agencies, agricultural universities, and ngos should work together to create women-led training centers, vocational schools, and mobile education units that can effectively reach rural communities.

Moreover, offering financial incentives for female education, such as scholarships, conditional cash transfers, and free agricultural training for women, can motivate families to prioritize girls' education. Significantly, incorporating gender-sensitive agricultural education into school curriculums can cultivate early awareness among young girls about their potential contributions to agriculture, inspiring future generations of women to assume leadership roles in the agribusiness sector.

Education and literacy are crucial factors in determining women's involvement in agriculture in kurukshetra district. Despite some advancements in enhancing female literacy rates, substantial obstacles persist, hindering rural women's access to education, technological expertise, and financial autonomy. Overcoming these challenges necessitates a comprehensive strategy that encompasses policy changes, active community involvement, and specialized educational initiatives to empower women with the skills needed for contemporary farming practices. By improving women's literacy and providing agricultural education, it is possible to foster a more inclusive, fair, and environmentally conscious agricultural sector, empowering women in kurukshetra to attain greater economic independence and enhance their quality of life.

Household Composition & Family Structures:

The composition of households and the structure of families have a significant impact on social, economic, and agricultural practices in rural areas, especially in agrarian societies like those found in kurukshetra district, haryana. The structure of a family, whether it is joint, nuclear, or extended, has a significant impact on decision-making, labor distribution, economic responsibilities, and the overall welfare of women in agriculture. The extent to which women engage in agricultural work, their control over financial resources, and their involvement in household decision-making are all shaped by factors such as the size of the household, the presence of male family members, the generational hierarchy, and societal norms.

In rural haryana, traditional patriarchal family structures still hold strong, with joint families being the most common type of household arrangement. In these communal living arrangements, multiple generations reside together, frequently sharing financial burdens and

engaging in agricultural tasks. The involvement of older male figures, such as fathers-in-law and husbands, has a substantial impact on women's ability to make decisions regarding farming, financial management, and household expenses. In joint families, women often have limited control over agricultural income and land ownership, as male members typically make the financial and farm-related decisions. However, in contrast, nuclear families, which are becoming more common due to urbanization and migration trends, offer women relatively more decision-making power and economic independence, although they may also increase the burden of household and agricultural responsibilities on women due to the absence of extended family support.

The number of people living in a household has a substantial effect on women's workload and economic duties in the agricultural sector. In larger families, the workload is typically distributed more evenly, enabling women to divide agricultural and domestic tasks among several female family members. Nevertheless, when families have fewer members, women may face heightened labor pressure as they are tasked with managing both farming and domestic duties without sufficient assistance. This burden is particularly evident in small and marginal farming households, where women contribute not only to subsistence farming and food security but also to non-agricultural income-generating activities such as dairy farming, handicrafts, and small-scale businesses.

The Role of Patriarchy and Gender Norms in Family Structures

In the rural region of kurukshetra, traditional gender roles and patriarchal norms have a significant impact on the organization of households and the responsibilities assigned to women. Traditionally, men have been seen as the main providers and decision-makers, while women have been expected to balance domestic responsibilities with their involvement in agriculture. This deeply ingrained system restricts women's control over land ownership, credit access, and agricultural profits, perpetuating their reliance on male family members.

In families where multiple generations live together, women's work in farming is often seen as an extension of their household responsibilities rather than a valued economic contribution. This perception has a substantial impact on women's bargaining power within the family and their capacity to request fair wages or access to financial resources. Despite their significant involvement in farming, which encompasses various tasks such as sowing, harvesting, post-harvest processing, and livestock management, women seldom receive an equitable share of agricultural profits, which are typically controlled by male household heads.

The structure of joint families can have an effect on women's ability to move around and participate in social activities. Numerous women encounter limitations in their ability to travel to markets, participate in agricultural training programs, or take part in decision-making forums, as their family structures tend to be more conservative. In certain instances, older female relatives, such as mothers-in-law or grandmothers, enforce these limitations, upholding traditional gender roles that hinder younger women's chances for personal and career development.

In nuclear families, these restrictions are not as strict, and women generally have more flexibility to engage in agricultural decision-making and market interactions. Due to the absence of generational gaps, women in nuclear families are more inclined to assume managerial positions in farming, invest in agribusiness enterprises, and actively participate in self-help groups (shgs) and government agricultural programs. The gradual transition to nuclear family structures, although not immediate, signifies a shift in the socio-economic landscape where women's involvement in agriculture and agribusiness is increasingly acknowledged.

Impact of Household Composition on Agricultural Labor Distribution

The organization of the family unit has a significant impact on the division of labor in agricultural tasks. In bigger families where multiple households live together, women often take charge of subsistence farming, livestock management, and post-harvest processing, while men handle market-oriented farming, financial negotiations, and mechanized agricultural tasks. In nuclear families, especially when men migrate for non-farm jobs, women typically handle all agricultural tasks, such as plowing, irrigation, crop selection, and market interactions. The "feminization of agriculture," a growing trend in haryana, is primarily driven by male migration to urban areas in search of job opportunities in industries and services.

The feminization of agriculture in nuclear families presents both obstacles and possibilities. On the positive side, women experience increased decision-making power in farm management and financial planning. Conversely, they encounter heightened workload, time scarcity, and restricted access to resources like modern farming equipment, technical training, and financial support from institutions. Women in smallholder farming households, who are often part of nuclear families, face challenges in managing both agricultural work and domestic duties due to the absence of support systems and labor-sharing mechanisms that joint families typically offer.

Furthermore, in households led by single women, which can result from widowhood, men leaving, or abandonment, women encounter significant socio-economic challenges. These families often face challenges in terms of land ownership, financial resources, and access to government support programs. Numerous widows and women left behind by their husbands often find themselves working in low-paying agricultural jobs, instead of tending to their own land, which deepens their reliance on landlords and male family members for financial support. Tackling these issues necessitates policy measures that ensure land rights, financial assistance, and agricultural training specifically designed to meet the needs of women in various household arrangements.

Influence of Household Structures on Women's Access to Resources

The composition of a household has a significant impact on a woman's ability to access agricultural resources, financial support, and participate in decision-making processes. In joint families, where land and property are jointly owned, women seldom have individual ownership rights, which restricts their capacity to obtain bank loans, agricultural subsidies, and government schemes. Despite women's substantial involvement in agricultural labor, they frequently face exclusion from formal land inheritance due to longstanding customs that prioritize male heirs.

Conversely, in nuclear families, particularly those where women actively manage agricultural land, there is a higher probability of women registering land under their names, which provides them with improved access to institutional credit, government support programs, and cooperative farming initiatives. Women who possess land and financial resources often have greater influence within their households and communities, enabling them to invest in advanced agricultural technologies, increase farm productivity, and improve their economic status.

The composition of households and family structures in kurukshetra district significantly affects women's livelihoods in agriculture, shaping their access to resources, labor involvement, decision-making authority, and economic autonomy. Although joint families offer advantages in terms of shared labor, they can also perpetuate traditional gender roles that restrict women's independence and financial decision-making. In contrast, nuclear families provide women with more decision-making power but may also lead to increased workload and economic vulnerability due to the lack of shared responsibilities.

In order to achieve gender equality in the agricultural sector, it is crucial to implement policies that acknowledge and value women's contributions in various household arrangements. Initiatives that address land ownership rights, financial inclusion, agricultural training, and social protection for single-woman-headed households can empower women farmers and enhance their overall well-being. By tackling the structural and socio-economic obstacles linked to household composition, it becomes feasible to increase women's involvement in agriculture, diminish gender gaps, and foster a more inclusive rural economy in kurukshetra district.

Economic and Workforce Participation:

Women play a crucial role in agriculture, making significant contributions to food security, rural economy, and household well-being. In the kurukshetra district of haryana, women play a significant role in the agricultural sector, engaging in various activities such as farm labor, crop cultivation, livestock management, dairy farming, post-harvest processing, and agribusiness. Despite their crucial role, their contributions are frequently overlooked, unacknowledged, and underpaid due to deeply ingrained patriarchal norms, lack of financial independence, and restricted access to resources. To comprehend the economic and workforce participation of women in agriculture, it is crucial to conduct a comprehensive analysis of their roles, the obstacles they encounter, and the policies that can facilitate their economic empowerment.

In Haryana, agriculture continues to be the primary sector, providing employment opportunities for a substantial number of people in rural areas. According to the reports from the national sample survey office (nssso) and census of india, women make up approximately 30-40% of the agricultural workforce in haryana. Unfortunately, because their work is not as formal, their contribution is often overlooked. Numerous women are employed as unpaid family laborers, performing arduous and physically demanding tasks like sowing, weeding, threshing, and harvesting without being compensated or having legal status as agricultural workers. This systemic exclusion restricts their economic agency and prevents them from accessing credit, insurance, and government support programs that are available to recognized farmers.

Women's participation in agriculture can be classified into different economic roles, such as self-employed farmers, daily wage laborers, landless agricultural workers, and entrepreneurs in the agribusiness sector. In kurukshetra, numerous women engage in subsistence farming, tending to small plots of land primarily for their own family's consumption. Women play a

crucial role in small and marginal farms, as they handle various responsibilities simultaneously, such as managing crops, taking care of livestock, raising poultry, and processing food. Although their contributions enhance household food security and nutritional well-being, their role as economic stakeholders within the agricultural system is often overlooked.

Women's Role in Agricultural Workforce Participation

In haryana, women have a high workforce participation rate in agriculture, but their economic visibility is low because they face limited formal employment opportunities, wage disparities, and a gendered division of labor. Women are often involved in tasks that involve physical labor, such as weeding, transplanting, harvesting, and grain processing, which demand physical endurance and expertise but are undervalued in comparison to mechanized farming roles typically performed by men.

Women play a significant role in livestock management, which is a crucial aspect of haryana's agricultural economy. In the kurukshetra district, dairy farming is a significant economic activity, and women are actively involved in feeding, milking, cleaning, and taking care of the livestock. Nevertheless, their efforts are often overlooked, as they rarely own dairy farms or directly benefit from milk sales. Instead, male family members typically handle the financial aspects and profits, leaving women financially reliant on their contributions.

A notable portion of women's involvement in the workforce can be observed in seasonal and migratory agricultural work. Numerous women without land work as daily wage laborers on large farms owned by affluent landlords. These jobs, frequently short-term and exploitative, provide meager pay, unfavorable working conditions, and no social security benefits. Government labor reports indicate that women agricultural laborers in Haryana earn 20-30% less than their male counterparts, even though they carry out equally challenging tasks. This wage gap not only perpetuates gender inequality but also impacts women's financial autonomy and ability to negotiate within their families.

Unpaid and Informal Work in Agriculture

A major challenge faced by women in agriculture is the prevalence of unpaid labor. Many rural women in Kurukshetra participate in farming activities without receiving monetary compensation, as their work is considered an extension of household responsibilities rather than formal employment. This lack of recognition prevents them from asserting their rights as economic contributors and denies them access to credit, land ownership, and government subsidies available to registered farmers.

Women engaged in subsistence farming often work long hours without financial returns, relying on family income or remittances from male members working in urban areas. This situation is exacerbated by the fact that land inheritance laws in Haryana favor male heirs, leaving women without legal ownership of agricultural land. Even when women actively cultivate land, the title remains in the name of male family members, restricting their ability to apply for agricultural loans, equipment subsidies, or insurance schemes.

Entrepreneurship and Women's Role in Agribusiness

Despite these challenges, many women in Kurukshetra have ventured into agribusiness and allied sectors, leveraging self-help groups (SHGs) and microfinance programs to establish small-scale food processing units, organic farming enterprises, and rural handicraft businesses. The rise of women-led agricultural cooperatives has facilitated their entry into formalized agribusiness markets, allowing them to generate income independently.

Several women's groups in Haryana have started organic farming initiatives, focusing on sustainable agricultural practices, herbal farming, and value-added products like organic spices and pickles. These enterprises not only contribute to economic growth but also enhance women's leadership and decision-making roles within their communities. However, despite these advancements, limited access to financial capital, lack of market linkages, and inadequate technical training continue to hinder women's success in agribusiness.

Government Policies and Women's Economic Empowerment in Agriculture

Acknowledging the importance of women's involvement in the agricultural sector, the government has implemented a range of policies and initiatives to encourage gender-inclusive farming methods. Programs such as the mahila kisan sashaktikaran pariyojana (mksp), rashtriya krishi vikas yojana (rkvy), and national rural livelihoods mission (nrlm) provide financial support, skill training, and agricultural extension services to women farmers.

Nevertheless, the challenge persists, as a significant number of women are unaware of these schemes or encounter difficulties in availing financial assistance due to bureaucratic obstacles. Furthermore, societal norms that limit women's freedom of movement and decision-making authority hinder their ability to fully take advantage of agricultural credit programs and rural business ventures. Overcoming these barriers necessitates policy measures that prioritize women's land ownership, provide gender-sensitive agricultural training, and ensure women's access to formal financial institutions.

The economic and workforce participation of women in agriculture in kurukshetra district is of great importance, yet it is often overlooked and undervalued. Despite their significant contributions to farm labor, livestock management, post-harvest processing, and agribusiness, they encounter systemic obstacles including wage disparities, land ownership limitations, unpaid labor, and restricted access to financial resources. Filling these gaps necessitates policy changes, financial inclusion plans, and community-led efforts that acknowledge women as equal participants in agriculture.

By advocating for gender-inclusive agricultural policies, ensuring women's access to financial resources and technological advancements, and supporting women-owned agribusinesses, we can empower women economically and foster their active participation in rural development. By tackling these challenges, it is possible to establish a fairer and more inclusive agricultural economy in kurukshetra, guaranteeing that women receive the acknowledgment, resources, and chances they rightfully deserve.

Health & Nutrition:

The well-being and dietary intake of women in the agricultural industry significantly impact their ability to perform tasks effectively, enhance productivity, and make valuable contributions to the sector. In the kurukshetra district of haryana, where agriculture is the main occupation, a significant number of women participate in diverse farming tasks, such as sowing, weeding, harvesting, threshing, and taking care of livestock. These tasks are physically challenging, necessitating stamina, endurance, and continuous effort. Despite their crucial contribution to agriculture, numerous women face nutritional deficiencies, occupational health risks, and limited access to healthcare, which directly impacts their ability to perform at their best in agricultural tasks.

The state of one's health and nutrition significantly influence their ability to perform well at work, maintain physical strength, and bounce back from challenges in the agricultural sector. A properly nourished woman is more likely to have abundant energy, increased productivity, and the ability to endure extended periods of physically demanding agricultural tasks. Conversely, inadequate nutrition, combined with health issues, results in diminished physical performance, higher absenteeism, and decreased economic productivity. In kurukshetra, numerous studies have shown that malnutrition, anemia, chronic fatigue, and musculoskeletal disorders are widespread among women engaged in agriculture, significantly hindering their ability to contribute effectively to farm activities.

In rural haryana, a major worry is the widespread occurrence of anemia among women who work in agriculture. According to the national family health survey (nfhs-5), nearly 55% of women in haryana experience anemia, a condition primarily caused by iron deficiency, inadequate dietary intake, and high energy expenditure in physically demanding farm labor. Women with anemia frequently encounter symptoms such as dizziness, weakness, breathlessness, and extreme tiredness, which can hinder their ability to engage in physically demanding farming tasks. Given that agricultural work demands constant physical exertion, women with anemia are more susceptible to workplace accidents, decreased productivity, and long-term health issues.

In addition to anemia, women involved in agriculture often suffer from deficiencies in calcium and vitamin intake. Calcium deficiency can lead to bone-related ailments, joint pain, and early onset of osteoporosis, which severely impacts women's ability to carry heavy loads, bend for extended periods while weeding, or perform repetitive physical movements during sowing and harvesting seasons. Due to a lack of variety in their diet, limited knowledge about nutrition, and financial limitations, many women struggle to incorporate nutrient-rich foods into their meals, worsening their health conditions.

Additionally, the reproductive health issues encountered by women agricultural workers in kurukshetra have a significant influence on their ability to contribute to agricultural productivity. Numerous women continue to work in various professions during pregnancy and the postpartum period, frequently neglecting their own well-being, including rest, nutrition, and medical oversight. This results in a significant number of maternal deaths, low birth weight infants, and long-term health complications for both the mother and child. The combined weight of household chores and physically demanding farm work exacerbates their maternal

health, resulting in complications like excessive bleeding after childbirth, infections, and persistent exhaustion.

A significant factor influencing women's health in agriculture is the presence of occupational hazards and exposure to harmful agrochemicals. In Haryana, the use of pesticides and fertilizers is prevalent, and numerous women actively engage in spraying chemicals on crops without proper protective equipment. Extended contact with these substances can lead to respiratory illnesses, skin infections, neurological disorders, and reproductive health issues. Research has indicated that women employed in agricultural settings where pesticides are extensively used are more susceptible to miscarriages, birth defects, and hormonal disruptions as a result of prolonged exposure to harmful chemicals. The absence of knowledge about the safe use of agrochemicals, combined with limited availability of protective gear, exacerbates the health risks associated with these substances.

Waterborne diseases and inadequate sanitation facilities also present significant health risks to women engaged in agricultural work. In numerous rural regions of kurukshetra, the availability of clean drinking water, adequate sanitation facilities, and menstrual hygiene products is scarce. This not only increases the risk of gastrointestinal infections, dehydration, and urinary tract infections (utis) but also forces many women to take unnecessary time off from work, impacting their income and overall farm productivity. Numerous women, particularly during their menstrual periods, encounter societal stigma, limited access to hygiene products, and unsanitary working environments, which further complicate their involvement in agricultural labor.

In addition to physical well-being, mental health issues are of utmost importance when considering women's productivity in the agricultural sector. The strain of juggling various obligations, financial uncertainty, land insecurity, and gender bias negatively impacts their mental health. Numerous women in kurukshetra face significant levels of stress, anxiety, and depression as a result of unfavorable working conditions, limited authority in decision-making, and restricted access to financial resources. The lack of mental health resources in rural regions poses a challenge for women in agriculture, making it harder for them to access counseling or psychological assistance, which in turn exacerbates their stress levels and hampers their productivity.

Tackling the health and nutritional issues faced by women in agriculture necessitates a comprehensive strategy that encompasses policy changes, community-driven health initiatives,

and educational campaigns focused on nutrition. Government initiatives such as the integrated child development services (icds), national nutrition mission (poshan abhiyaan), and rashtriya krishi vikas yojana (rkvy) have been launched to improve the nutritional status and health outcomes of women in rural areas. Unfortunately, the implementation of these benefits is still lacking, leaving many women uninformed about the advantages they are entitled to. Enhancing these programs by expanding outreach efforts, improving healthcare facilities, and implementing gender-sensitive health policies is vital for achieving improved health outcomes for women in agriculture.

Alongside government interventions, community-led efforts can have a substantial impact on enhancing the health and nutrition of women working in agriculture. Organizing nutrition awareness workshops, promoting kitchen gardening for household nutrition, and encouraging women's participation in self-help groups (shgs) focused on health and well-being can lead to positive changes in dietary habits and overall well-being. Additionally, making healthcare services more affordable, setting up mobile health clinics, and organizing regular health check-up camps in rural areas can assist women in identifying health problems early, receiving prompt treatment, and enhancing their work productivity.

One crucial approach is offering financial rewards to women farmers to encourage them to adopt practices that enhance their nutrition and overall health. Providing affordable fortified food items, free iron and folic acid supplements, and convenient access to clean drinking water can greatly improve their nutritional intake and productivity. Furthermore, creating women-led agricultural cooperatives that provide education on safe farming practices, health risks, and nutrition-rich crops can empower women to make informed choices regarding their well-being and financial security.

The health and nutrition of women play a crucial role in determining their agricultural productivity in the kurukshetra district. The widespread occurrence of anemia, malnutrition, occupational health risks, and limited access to healthcare services greatly affects their physical stamina, work productivity, and economic contribution. Without proper nutrition, medical assistance, and workplace safety precautions, women's involvement in agriculture is hindered, resulting in decreased productivity, heightened health hazards, and financial insecurity.

Enhancing women's health and nutrition status through comprehensive policies, targeted nutritional programs, improved healthcare facilities, and community-driven interventions is crucial for boosting their agricultural productivity and economic empowerment. Overcoming

these obstacles will not only enhance the livelihoods of individual women farmers but also contribute to the overall development of rural areas, ensuring food security and promoting gender equality in the agricultural sector. By prioritizing women's health and well-being, it is possible to establish a sustainable and inclusive agricultural sector where women can flourish, make significant contributions, and attain financial independence.

Resources & Infrastructure Access:

The availability of agricultural resources and infrastructure is crucial in determining the success and productivity of women involved in farming. In kurukshetra district, haryana, where a significant proportion of women contribute to various agricultural activities, their access to critical resources such as land, water, credit, inputs, technology, training, and extension services remains limited and gender-biased. The efficiency with which women farmers utilize agricultural resources directly impacts their ability to boost yields, promote sustainability, enhance profitability, and achieve economic independence. Unfortunately, due to structural inequalities, limited financial independence, and socio-cultural barriers, women in kurukshetra frequently face challenges in accessing resources. The uneven allocation of resources and limited access to infrastructure significantly affects their capacity to engage in decision-making, embrace modern farming methods, and reap the advantages of technological progress in agriculture.

One of the most significant obstacles encountered by women in agriculture is the lack of ownership and access to land. In Haryana, as in many regions of India, land is a crucial asset that influences an individual's agricultural prospects, financial well-being, and eligibility for institutional credit. Unfortunately, due to patriarchal inheritance laws and customary practices, women are often unable to own land or have control over its usage. Research findings suggest that only a small percentage, approximately 13%, of women in Haryana own land, even though they play a significant role in the agricultural sector. Due to the lack of legal ownership or tenure security, women farmers encounter numerous obstacles in securing credit, accessing government subsidies, and making long-term investments in agricultural enhancements. The absence of land rights results in women's labor being overlooked, and they continue to rely on male family members for significant agricultural choices.

One significant limitation is the restricted availability of credit and financial services. Financial independence is a crucial factor in enabling women farmers to invest in high-quality seeds, fertilizers, modern irrigation techniques, and farm equipment. Unfortunately, because of their

lack of land ownership and collateral, women frequently face difficulties in obtaining agricultural loans from traditional banks. In many cases, they are forced to rely on informal lenders who charge exorbitant interest rates, further pushing them into cycles of debt and financial instability. Although government initiatives such as the *pradhan mantri mudra yojana* (pmmy) and *mahila kisan sashaktikaran pariyojana* (mksp) aim to provide financial support to women farmers, the implementation remains weak, and many women are unaware of their eligibility or face bureaucratic hurdles in accessing such benefits. Ensuring equal access to financial credit and promoting gender-sensitive banking policies is essential for enhancing women's economic participation and self-reliance in agriculture.

The unequal availability of essential agricultural inputs like high-quality seeds, fertilizers, pesticides, and irrigation facilities worsens the gender gap in agricultural productivity. Women farmers in *kurukshetra* frequently face restricted decision-making authority when it comes to the acquisition and utilization of these crucial inputs. Research has indicated that in farming households where women participate, men usually handle the procurement of fertilizers and pesticides, while women are primarily responsible for labor-intensive activities like sowing, transplanting, and weeding. Consequently, women have limited control over farm management practices, which restricts their capacity to experiment with improved farming techniques, diversify crops, or transition to more sustainable agricultural methods. By establishing women-led farmer cooperatives and providing subsidized access to agricultural inputs, it is possible to empower women and strengthen their decision-making capabilities in the agricultural sector.

The progress in agricultural technology has transformed farming methods, crop management, and overall productivity, yet women in *kurukshetra* encounter obstacles in accessing and effectively utilizing these modern advancements. The digital divide, low literacy levels, absence of training programs, and socio-cultural norms that discourage women's involvement in technological learning pose significant challenges to their acceptance of modern tools and equipment. The majority of machinery, including tractors, tillers, and mechanical harvesters, is operated by men, resulting in women being assigned to manual and physically demanding agricultural duties. By implementing gender-inclusive mechanization programs that address the specific needs of women farmers, along with providing comprehensive training on utilizing modern technology, the agricultural sector can experience enhanced efficiency, reduced physical strain, and increased overall productivity. Furthermore, mobile-based agricultural advisory services and women-friendly technology centers can offer women up-to-date

information on market prices, weather forecasts, pest control methods, and effective farming techniques.

Managing water resources is a crucial aspect of agricultural productivity, especially in a district like kurukshetra, where irrigation-intensive farming is prevalent. Although the district has a comprehensive canal and tubewell irrigation system, women frequently face challenges in accessing these facilities directly. In many cases, decisions regarding irrigation are made by male household members or village councils, which restricts women's capacity to guarantee sufficient water for their agricultural lands. Moreover, in areas where water is scarce, women are typically assigned the task of fetching water for both household and agricultural purposes, which limits the time they can allocate to farming activities. By introducing irrigation schemes specifically designed for women and offering training on water management techniques like drip irrigation and rainwater harvesting, we can improve water-use efficiency and strengthen agricultural resilience.

When it comes to market access and value chain integration, women farmers in kurukshetra encounter numerous obstacles in selling their agricultural products at fair prices. Due to physical limitations, inadequate transportation options, and limited market awareness, women are often compelled to sell their produce at lower prices to middlemen or local traders instead of directly accessing government-regulated markets (mandis). Moreover, they frequently encounter prejudice and unfair treatment in male-dominated marketplaces, which restricts their ability to earn a fair income. The creation of women-led farmers' markets, cooperative societies, and digital marketing platforms can open up new avenues for women farmers to sell their products at reasonable prices and establish a more prominent presence in the agricultural sector.

Extension services and skill development programs play a vital role in improving women's knowledge and skills in modern farming techniques, agribusiness, and sustainable agricultural practices. Unfortunately, traditional agricultural extension services have been primarily focused on men, with most training programs tailored for and attended by them. The low participation of women in these programs can be attributed to socio-cultural barriers, time constraints, and a lack of awareness about their benefits. Gender-sensitive agricultural extension programs that address women's unique requirements, offer flexible training options, and adopt localized learning methods can equip them with the skills needed to shift towards commercial agriculture and agribusiness enterprises.

The absence of adequate agricultural resources and infrastructure severely restricts women's ability to improve agricultural productivity and achieve economic independence in kurukshetra district. In addition to land ownership and financial credit, women encounter numerous obstacles in accessing agricultural inputs, technology, water management, market access, and extension services, which hinder their full involvement and reaping the benefits of the agricultural sector. Tackling these disparities necessitates a comprehensive strategy that encompasses policy changes, gender-inclusive financial services, technology-driven solutions, and community-driven initiatives. By guaranteeing equal access to resources and providing women with the required tools, knowledge, and institutional backing, it becomes feasible to establish an agricultural sector that is inclusive, efficient, and sustainable, enabling women to flourish as successful and self-reliant agricultural entrepreneurs.

3.2.2 Agricultural Practices and Gendered Labor Divisions in Kurukshetra:

The agricultural practices in kurukshetra district, haryana, have a profound influence on the socio-economic and cultural dynamics within rural households. Understanding these agricultural practices and the corresponding gendered labor divisions is key to assessing the livelihoods of women in this region, as these divisions shape the day-to-day realities of women's roles in farming and their overall socio-economic status. This examination forms the core of the study titled "women livelihood in agriculture: a sociological study in kurukshetra district, haryana." by exploring how gendered labor divisions operate within agricultural practices, this research aims to shed light on how gender roles intersect with agricultural production, farm household management, and decision-making, and how these intersecting aspects of life affect women's empowerment and the broader agricultural economy.

Agriculture serves as the foundation of the rural economy in kurukshetra, and women's active participation is crucial for its smooth operation. However, the roles women play are often characterized by a gendered division of labor, where certain tasks are designated for women while others are reserved for men, creating a dichotomy between labor that is seen as prestigious and public versus that which is considered private and less valued. Men typically engage in tasks that are perceived as more technical, such as managing irrigation systems, operating machinery, and engaging in cash crop production, while women are involved in labor-intensive activities such as sowing, planting, harvesting, and post-harvest processing. Although the role of women in agricultural labor is unquestionable, these responsibilities are frequently overlooked in economic measurements. Women's contribution to food security

within the family is crucial, but their labor is often disregarded in terms of cultural and economic recognition. As a result, the agricultural practices in the area are not just about making money but also about the social structures that show the power differences between men and women in the community.

The significance of agricultural practices in comprehending gendered labor divisions is rooted in how these practices are organized and allocated within the family and the community. Agricultural work, which has historically been associated with men, is physically demanding, particularly in subsistence farming and small-scale crop cultivation. Although men frequently take charge in cash crops or market-oriented farming, women still hold the majority of responsibility for the care and management of household farms. They engage in activities such as weeding, sowing, transplanting, and harvesting, and in certain cases, they also take care of livestock farming, which plays a crucial role in providing income and ensuring food security for numerous families. These responsibilities are typically confined to the domestic domain, with women carrying them out in the background while men take on the more prominent roles related to farming and economic activities. The study of agricultural practices is of utmost importance in comprehending how gender relations are upheld and reinforced in kurukshetra.

The socio-cultural context of gendered labor divisions is a key factor in influencing agricultural practices. Similar to many rural areas in India, patriarchal norms and cultural expectations shape the roles of men and women within households and in agricultural practices in kurukshetra. Traditionally, men have been viewed as the main providers and are expected to take charge of tasks related to profitable crops, financial management, and large-scale production. Women's roles, in contrast, are primarily focused on household-based tasks, such as the production of food for the family, physical labor, and maintaining the overall condition of the household farm. These traditional gender roles are shaped by long-standing societal beliefs and practices, where cultural norms dictate the visibility and significance of women's work. Women's contributions to agriculture are frequently overlooked, despite their crucial role in ensuring the family's survival and financial stability. This deeply rooted gender division impacts women's access to resources, including land, technology, and financial services, and restricts their involvement in commercial agriculture, thereby hindering their economic independence.

The influence of farming methods on women's economic standing in kurukshetra is significant. Although women's labor plays a crucial role in household farming, their economic value is

often overlooked when it comes to monetary compensation. This can be attributed to the fact that women's roles in agricultural practices are often considered less important than men's more visible and market-oriented contributions. In many cases, men tend to have a greater share of land ownership, while women face challenges in accessing credit and technology, which limits their ability to enhance agricultural productivity and participate in market-oriented farming practices. Women's participation in agriculture is often associated with subsistence farming, and they tend to have limited access to financial resources or advanced technologies that could enhance their agricultural productivity and profitability. The absence of economic autonomy and the ability to make decisions regarding agricultural practices can contribute to women's social exclusion. Without control over resources like land or the income generated by the farm, women's ability to contribute to the household's overall wealth and status is restricted. Consequently, women's socio-economic empowerment is closely linked to transforming agricultural practices, which in turn enhances their access to resources, technologies, and financial services.

Being involved in making decisions related to agriculture is a crucial factor in empowering women in rural communities. In kurukshetra, women frequently face a lack of representation in agricultural choices, including the selection of crops, the utilization of inputs, and the sale of agricultural goods. These choices, which are usually made by men, have a significant impact on the family's financial path and, consequently, the overall achievement of the agricultural business. The absence of women's participation in these decision-making processes can reinforce their economic reliance and social subordination. Despite their significant contributions to agriculture, women are frequently excluded from formal decision-making bodies such as cooperatives, farmers' groups, and government consultations, where crucial decisions regarding land management, subsidies, and resource allocation are made. This exclusion restricts their access to agricultural training, extension services, and government policies that could improve their involvement in the agricultural economy. By analyzing the decision-making processes and women's roles within these processes, the study aims to identify areas where gender inequalities in agricultural practices can be addressed.

Government policies and support systems are of utmost importance in influencing the agricultural practices in kurukshetra. Agricultural policies frequently overlook the gender inequalities that persist in terms of access to resources, technologies, and support services, hindering productivity improvements. Women farmers in kurukshetra frequently encounter obstacles in obtaining government subsidies, land grants, and agricultural loans due to gender-

based biases in the implementation of policies. Policies that fail to consider women's unique requirements, such as land ownership rights, financial support, and agricultural education, are often unsuccessful in enhancing women's economic status. Additionally, gender-neutral policies that fail to consider the specific roles women play in agriculture and the unequal distribution of labor between genders tend to worsen existing disparities. The research will investigate how government policies can be modified or expanded to better meet the needs of women, with the goal of enhancing their economic involvement and empowerment in the agricultural sector.

The gendered labor divisions in agriculture in kurukshetra have substantial consequences for the long-term sustainability of farming practices. Sustainable farming necessitates a fair allocation of labor and resources, but when gender roles dictate unequal distribution, the sustainability of agriculture is frequently compromised. The active participation of women in preserving agro-biodiversity, conserving water resources, and managing soil fertility is vital for sustaining agricultural systems in the long run. Unfortunately, due to the traditional division of labor, women's work is often limited to farming and processing crops after harvest, which means they are often left out of important discussions and decisions that affect the environment and resource management on a larger scale. Their commitment to sustainable practices, such as organic farming or rainwater harvesting, could strengthen the long-term resilience of farming systems, but they require access to resources, training, and support to implement them successfully. The research aims to investigate how gender roles in farming can be incorporated into sustainable agricultural methods and how women's work can be acknowledged and supported to enhance their well-being and the overall agricultural sector.

The agricultural practices and gendered labor divisions in kurukshetra offer valuable insights into the intricate connection between gender, agriculture, and women's economic well-being. By examining how agricultural practices are influenced by gender-based labor divisions, the study will shed light on the obstacles women encounter in achieving economic autonomy, social recognition, and equitable access to resources. Additionally, it will pinpoint areas where women can be more involved in making agricultural decisions, pushing for policies that consider gender, and encouraging sustainable farming methods that empower women. By examining the gendered aspects of agricultural work, this research aims to shed light on how gender equality can be promoted within the agricultural sector, ultimately benefiting women's socio-economic status and the long-term viability of agricultural practices.

3.3 Sampling Framework and Participant Selection:

3.3.1 Purposive Sampling of Women Farmers Based on Socio-Economic Diversity:

Purposive sampling, a non-probability sampling technique, will be employed in this research to deliberately select participants who possess specific characteristics that align with the research objectives. This method is particularly effective for studies seeking to understand the experiences and insights of particular groups within a larger population. In the case of the study titled "**Women Livelihood in Agriculture: A Sociological Study in Kurukshetra District, Haryana,**" purposive sampling will enable the researcher to carefully choose women participants from diverse socio-economic backgrounds who are engaged in various aspects of agricultural work. This approach is essential for understanding the intersection of gender, socio-economic status, and agricultural labor within the rural context of Kurukshetra.

1. The Role of Purposive Sampling in Understanding Women's Agricultural Livelihoods

Purposive sampling serves a critical role in this research as it allows the researcher to target specific individuals who are likely to have rich, firsthand knowledge of the phenomenon being studied. By purposefully selecting participants, the study will ensure that the data collected is highly relevant and rich in context. Women involved in agriculture in Kurukshetra represent a complex group, each with unique socio-economic backgrounds, educational levels, and agricultural practices. Purposive sampling ensures that these varying factors are captured in the study, thus providing a comprehensive view of the challenges and opportunities faced by women in the agricultural sector.

In rural areas like Kurukshetra, the roles of women in agriculture are often shaped by socio-economic factors such as land ownership, access to credit, education, and household responsibilities. Purposive sampling will allow the researcher to focus on women who reflect these varied characteristics, thus offering deeper insights into the intersection of gender and socio-economic status within agriculture. This method ensures that the sample is representative of the key sub-groups within the population, providing a nuanced understanding of how different socio-economic backgrounds impact women's engagement in agricultural work and decision-making.

2. Criteria for Participant Selection: Reflecting Socio-Economic and Demographic Diversity

To achieve a well-rounded and comprehensive study, women will be selected based on several socio-economic and demographic factors that directly influence their roles in agriculture. These factors include, but are not limited to, **land ownership status, economic class, education level, age, social position, and type of agricultural work**. Each of these elements is pivotal in understanding the broader patterns of agricultural labor, income generation, and gendered divisions of labor in rural India.

1. **Land Ownership and Control:**

- **Landowning Women:** The researcher will select women who own agricultural land, as they typically have more authority and control over the land, agricultural practices, and the income generated from farming. By including women with land ownership, the study will explore how autonomy in decision-making, access to resources, and participation in the broader agricultural economy differ between landowners and non-landowners.
- **Landless Agricultural Workers:** Women without land, who are primarily involved in agricultural labor for wage work, will also be included. This group often faces greater financial instability and dependency on landowners for employment. Their experiences, including issues such as wage inequality, seasonal employment, and lack of access to agricultural resources, will provide valuable insights into the economic vulnerabilities and power dynamics that shape their livelihoods.

2. **Economic Class and Household Role:**

- **Class and Economic Diversification:** The economic status of women participants will be considered carefully. Women from different economic backgrounds will be selected to understand how poverty, wealth, and access to agricultural resources impact women's participation in agricultural labor and their household roles. For example, women from wealthier agricultural families may have access to advanced farming technologies, better land resources, and more autonomy, whereas women from poorer families may engage in physically demanding, low-wage work without the same decision-making power.
- **Impact of Household Responsibilities:** The role of women in the household, both in terms of domestic labor and decision-making, will also be a selection

criterion. Women who are heads of households, as well as those who contribute labor under the authority of male family members, will be included to capture the different social dynamics at play. The power structures within households can significantly affect women's access to resources, their ability to make decisions about agricultural production, and their participation in household financial matters.

3. **Education and Access to Training:**

- **Educational Background:** Women with varying levels of education will be included in the sample to understand the influence of formal education and agricultural training on women's participation in the agricultural sector. Educational background can play a pivotal role in determining women's access to information about agricultural innovations, their ability to make informed decisions about crops, and their role in agricultural marketing. Women with higher educational qualifications may have better access to training programs, extension services, and government support, giving them an edge in improving their productivity and income.
- **Training and Skill Development:** In addition to formal education, the study will consider women's involvement in agricultural training programs or exposure to government initiatives aimed at improving agricultural productivity. Participants who have been exposed to agricultural training may adopt more modern farming techniques, improving not only their own livelihoods but also contributing to the broader agricultural community.

4. **Age and Generational Differences:**

- **Young vs. Older Women:** The study will explore the generational differences in agricultural work, and purposive sampling will ensure that women from different age groups are included. Younger women, particularly those in their 20s and 30s, may bring fresh perspectives, possibly integrating new farming technologies and approaches. On the other hand, older women, typically in their 40s or 50s, may have extensive experience and wisdom derived from traditional farming methods passed down through generations. This contrast will provide a more comprehensive understanding of the transition from traditional to

modern agricultural practices and the challenges that women face during this process.

5. **Caste and Social Stratification:**

- **Caste-based Inequality:** The social stratification in rural India, particularly caste-based inequalities, plays a significant role in shaping women's access to resources and opportunities in agriculture. Women from lower caste backgrounds, especially those from **Scheduled Castes (SC)** and **Scheduled Tribes (ST)**, will be included to explore the unique challenges they face. These women often have less access to land, credit, and training and may be confined to lower-paying, labor-intensive agricultural work. Including women from different caste groups will shed light on the intersectionality of caste and gender, providing a nuanced view of how these social factors shape women's roles in agriculture.

6. **Type of Agricultural Work:**

- **Diverse Agricultural Roles:** Women in Kurukshetra participate in a wide range of agricultural activities, including crop production, animal husbandry, horticulture, weeding, post-harvest processing, and marketing of agricultural produce. The study will include women engaged in different types of agricultural work to capture the diversity of roles they play in the sector. This diversity in the type of work will allow the researcher to understand the gendered nature of agricultural labor and how women's tasks may differ based on the type of agriculture practiced in the region.

3. **Purposive Sampling Process: A Structured Approach to Data Collection**

The purposive sampling process will be carried out in several key stages, each aimed at identifying and selecting women participants who meet the specified criteria. The process will ensure that the sample is as representative and diverse as possible, providing rich and varied data for analysis.

1. **Engaging with Local Stakeholders:** The initial step in the sampling process will involve engaging with local community leaders, village heads, agricultural cooperatives, women's self-help groups, and local NGOs that work with rural women

in agriculture. These stakeholders can help identify women farmers who fit the research criteria and facilitate initial contacts.

2. **Field Visits and Community Engagement:** Following the initial engagement with stakeholders, the researcher will conduct **field visits** to various rural areas within Kurukshetra. These visits will allow the researcher to observe the community dynamics, assess the agricultural activities in the region, and establish a rapport with potential participants. By attending local gatherings, agricultural fairs, or self-help group meetings, the researcher will gain insight into the socio-economic conditions of the women in the community.
3. **Refining Participant Selection:** Once the researcher has identified potential participants, detailed interviews will be conducted to confirm eligibility based on the socio-economic diversity criteria. During these interviews, the researcher will ensure that participants meet the required criteria and are willing to take part in the study.
4. **Building Trust and Rapport:** Trust-building will be a critical aspect of the sampling process. Women in rural areas may be wary of participating in research, especially if they are unfamiliar with the researcher. By establishing trust and rapport through multiple interactions, the researcher will ensure that participants feel comfortable sharing their experiences and insights.

3.3.2 Justification for Sample Size and Inclusion Criteria:

In this section, we elaborate on the justification for selecting the appropriate sample size and the inclusion criteria for participants. The primary goal is to ensure that the research design captures the diverse socio-economic and cultural characteristics of women involved in agriculture in Kurukshetra district, Haryana. The sample size must be large enough to generate reliable data but also manageable within the scope of the study. At the same time, the inclusion criteria will ensure that the participants are representative of the population and can provide relevant insights into the research questions. Through careful consideration of these aspects, the study will be able to accurately assess the various dimensions of women's livelihood in agriculture and offer valuable sociological insights.

1. Sample Size Determination

The sample size for this study is a crucial aspect of ensuring that the findings are both statistically meaningful and representative of the target population. Since the study employs

purposive sampling, the size of the sample does not need to be random or based solely on statistical formulas. However, the sample must be sufficiently large to allow for a thorough analysis of the various socio-economic factors that influence women's roles in agriculture in Kurukshetra.

a. Population Considerations

As per the 2011 Census, the total population of Kurukshetra district is approximately **960,000**, with around **30%** of the population residing in rural areas, engaged predominantly in agriculture. Given the high proportion of rural women involved in agricultural labor, estimating the exact number of women directly engaged in agriculture is challenging, as it varies with seasonality, crop types, and rural migration. However, the **rural female workforce** in Kurukshetra is predominantly composed of **agricultural laborers** (e.g., weeding, harvesting, etc.) and **cultivators**, with many women also involved in livestock and food processing activities.

For the purpose of this study, we aim to select a representative sample of **200 women farmers** across various age groups, educational backgrounds, socio-economic statuses, and types of agricultural work. This sample size is large enough to account for the socio-economic and cultural diversity within Kurukshetra and provides a substantial dataset for qualitative analysis. With this size, the study can capture a wide range of experiences, ensuring that the insights gathered reflect the diverse realities of rural women involved in agriculture.

b. Statistical Power and Confidence

To ensure that the study produces reliable results, the sample size needs to be adequate for statistical analysis. Based on standard guidelines for sociological research, a sample size of **200 women** is considered statistically significant for qualitative research. This allows for the use of both **quantitative** (e.g., frequency distribution) and **qualitative** (e.g., thematic analysis) methods. A sample size of this magnitude can provide a **95% confidence level** with a **margin of error of 5%**, which is typically acceptable for most sociological studies.

c. Feasibility and Resource Considerations

While a larger sample size would enhance the study's robustness, resource constraints—such as time, budget, and access to participants—necessitate the selection of an optimal sample size. A smaller sample size might risk reducing the diversity of perspectives, while a sample that is too large would make data collection and analysis more complex and resource-intensive. Thus,

200 participants is a balanced choice that offers an efficient and manageable scope while ensuring that sufficient data is gathered to draw meaningful conclusions.

2. Inclusion Criteria

The inclusion criteria are carefully crafted to ensure that the study captures the experiences of women who represent the most critical factors influencing agricultural livelihoods in Kurukshetra. These criteria ensure that the sample is not biased toward any particular group and reflects the socio-economic and cultural diversity of women engaged in agriculture.

a. Gender and Employment in Agriculture

The primary inclusion criterion for participants is that they must **identify as women** and be **actively involved in agricultural labor** in Kurukshetra. Women engaged in various agricultural activities, such as **crop production, animal husbandry, post-harvest activities, processing of agricultural products, and marketing**, will be included. These activities represent the diverse roles women play in agriculture, providing a comprehensive understanding of their contributions to both family livelihood and the local economy.

Participants must also be involved in agriculture as **primary or secondary employment**. This includes women who own land, women who work on family-owned land, and women who provide labor on land owned by others. The inclusion of both **landowners** and **landless laborers** ensures that the study captures the experiences of women across the socio-economic spectrum.

b. Age and Life Stages

Women of varying **age groups** will be included in the sample to understand the generational differences in agricultural practices and the socio-economic roles of women in agriculture. The study will aim to include women who represent different life stages:

- **Young women** (ages 18-30): These women may represent the younger generation, potentially more open to adopting modern agricultural techniques and having a different experience compared to older generations.
- **Middle-aged women** (ages 30-50): These women may have accumulated experience and responsibilities related to both family and agricultural work.
- **Older women** (ages 50+): Older women may have more traditional approaches to farming and have seen significant changes in agricultural practices over time.

By including women from all age categories, the study will be able to explore the different challenges faced by women in agriculture, such as access to resources, decision-making authority, and the balance between work and family life, at different stages of life.

c. Educational Background and Access to Training

A key inclusion criterion is the **educational level** and exposure to **training**. Women with varying levels of formal education will be included to assess how education influences agricultural productivity, decision-making, and overall involvement in agricultural practices. The study will aim to select participants from three primary education levels:

- **Low education level** (primary school or below): These women may rely on traditional farming practices and may face more barriers to accessing resources, information, and technology.
- **Moderate education level** (secondary school or diploma): These women may have some exposure to formal education and agricultural extension programs, potentially impacting their engagement with modern agricultural practices.
- **Higher education level** (college or university): Women with higher education might have access to more advanced agricultural technologies, resources, and leadership positions in local agricultural cooperatives.

The inclusion of women with varying educational backgrounds will allow the researcher to assess how education shapes women's roles in agriculture and their overall socio-economic status.

d. Socio-Economic Status and Land Ownership

Another important inclusion criterion is the **socio-economic status** of the women. This can be measured in terms of **household income**, **land ownership**, and **access to agricultural resources**. The study will ensure that the sample includes women from different economic backgrounds, such as:

- **Landowners**: Women who own agricultural land and are involved in managing and making decisions about its use.
- **Landless laborers**: Women who do not own land but provide agricultural labor on others' land.

- **Women engaged in non-farm activities:** Some women may be engaged in non-farming activities (such as weaving, small businesses, or teaching) that supplement their family income and contribute to the household's overall livelihood.

These socio-economic factors play a significant role in shaping women's roles in agriculture, access to resources, and ability to make decisions. By including women from diverse socio-economic backgrounds, the study can offer a more comprehensive picture of the challenges and opportunities faced by women in agriculture.

e. Caste and Social Stratification

Caste plays a significant role in shaping women's experiences in agriculture. Women from various **caste backgrounds**, including **Scheduled Castes (SC)**, **Scheduled Tribes (ST)**, **Other Backward Classes (OBCs)**, and **General Castes**, will be included to explore the social stratification within agricultural labor. Caste-based disparities often influence access to land, credit, and training programs, and can affect the social standing and economic mobility of women involved in agriculture.

By including women from different caste groups, the study will explore how caste intersects with gender to create varied agricultural experiences and livelihoods.

3. Ensuring Inclusivity and Representation

The inclusion criteria are designed to ensure that the study is **inclusive** and **representative** of the entire spectrum of women involved in agriculture in Kurukshetra. The criteria account for differences in **age, education, economic status, land ownership, caste, and the type of agricultural labor** women are engaged in, ensuring that the sample reflects the diversity of experiences and challenges faced by rural women.

Moreover, purposive sampling based on these criteria will ensure that the study does not overlook underrepresented groups, such as women from marginalized castes or those engaged in informal labor. This inclusivity will allow for a more comprehensive understanding of the factors that shape women's agricultural livelihoods and provide insights into the policy measures that can address their needs more effectively.

The sample size and inclusion criteria for this study have been carefully designed to ensure a representative and diverse participant group. By selecting women based on their socio-economic, educational, and demographic characteristics, the research will provide nuanced

insights into the roles and challenges of women in agriculture in Kurukshetra district. The study's findings will be crucial in understanding the structural factors that influence women's livelihoods, the division of labor, and the socio-economic barriers they face, thereby contributing valuable knowledge to the discourse on rural development and gender equality in agriculture.

3.4 Data Collection Methods and Tools:

3.4.1 Utilization of Structured Questionnaires for Quantitative Insights:

In the research study "Women Livelihood in Agriculture: A Sociological Study in Kurukshetra District, Haryana," the role of structured questionnaires as a primary data collection tool is crucial for gaining quantitative insights into the socio-economic status, roles, and challenges faced by women in the agricultural sector. Structured questionnaires are standardized tools that enable the researcher to collect numerical data efficiently and ensure comparability across the entire sample. Given the socio-cultural and economic complexities surrounding women's roles in agriculture, this tool will provide reliable data to answer the research questions, identify key patterns, and highlight socio-economic disparities.

With a sample size of 200 participants, the structured questionnaires will allow for the collection of extensive data from women across Kurukshetra, providing a representative understanding of their agricultural labor practices, economic contributions, access to resources, and social barriers. This section discusses how structured questionnaires, as a data collection method, will be effectively utilized in this study, the types of questions that will be included, and how the insights derived from the responses will enhance the overall research findings.

1. Rationale for Using Structured Questionnaires

The adoption of structured questionnaires as a research tool is highly beneficial in the context of this study, particularly for capturing quantitative insights on women's roles in agriculture. The structured questionnaire offers several advantages:

a. Standardization and Objectivity

A structured questionnaire provides a standardized format for all respondents, ensuring that each participant answers the same set of questions in the same order. This consistency is critical in research studies involving large sample sizes, as it minimizes the risk of bias and ensures that the data collected is reliable and valid. By ensuring uniformity, the researcher can make

meaningful comparisons across the sample group of 200 participants. This is particularly important in a sociological study like this, where understanding the diversity in women's agricultural roles and their socio-economic status is central.

b. Efficient Data Collection

With 200 respondents across various rural areas in Kurukshetra, a structured questionnaire is an efficient way to collect large volumes of data in a short period. Unlike in-depth interviews, which are time-consuming and resource-intensive, questionnaires allow researchers to reach a broader range of participants quickly, thus making the study more efficient in terms of time and effort. Additionally, data entry and analysis become easier and more accurate when collected through structured formats.

c. Quantifiable and Statistical Analysis

One of the primary benefits of using structured questionnaires is that they facilitate quantifiable data collection, which can be subjected to statistical analysis. The responses from the 200 participants will yield numerical data that can be analyzed using various statistical techniques such as frequency analysis, cross-tabulations, and correlation analysis. This enables the researcher to identify patterns, trends, and relationships between variables, such as the socio-economic background of women, their involvement in agricultural activities, and the factors influencing their productivity and income.

d. Generalizability of Findings

Given the relatively large sample size of 200 participants, the findings from the structured questionnaires can be generalized to the broader population of women involved in agriculture in Kurukshetra. The responses can reflect the socio-economic conditions, gendered labor divisions, and economic contributions of women in agriculture, making the findings applicable beyond the specific sample group.

2. Designing the Structured Questionnaire

Designing the structured questionnaire for this research involves identifying key research themes and crafting questions that will yield quantifiable insights into the socio-economic position of women in Kurukshetra's agricultural sector. The questionnaire will be designed with a set of focused sections that align with the study's objectives:

a. Demographic Information

The first section of the questionnaire will gather demographic data that will help understand the socio-economic profile of the respondents. It is important to have a clear picture of the respondents' background to assess how demographic variables influence their role in agriculture.

- **Age:** Participants will be asked to select their age group, allowing for an understanding of generational differences in agricultural involvement.
- **Marital Status:** Questions will inquire about whether participants are married, single, or widowed to explore the intersection of marital status and women's autonomy and access to resources.
- **Education Level:** Participants will be asked to indicate their highest level of education completed. This will help assess the relationship between education and women's agricultural knowledge, productivity, and decision-making power.
- **Family Structure:** This question will explore family composition, such as the number of dependents, as it impacts the division of labor in the household.

b. Involvement in Agricultural Practices

This section will focus on understanding the specific roles women play in agricultural work and their level of engagement in various activities:

- **Types of Agricultural Work:** Questions will examine whether women are involved in tasks such as sowing, harvesting, tending to livestock, and maintaining equipment. This will provide a comprehensive understanding of the women's contributions to agricultural production.
- **Ownership and Control of Land:** Respondents will be asked whether they own land, rent it, or work on family land. This question will be crucial in understanding women's access to productive resources and their role in decision-making about land use.
- **Income from Agriculture:** Women will be asked about their income from agricultural activities, including whether it is their primary source of income or if they supplement it with other income-generating activities. This will help determine the economic contribution of women to their households and the broader rural economy.
- **Decision-Making Power:** Participants will be asked about their involvement in major household decisions, such as purchasing inputs, selecting crops, and managing

finances. This will highlight women's economic autonomy and empowerment within the household.

c. Access to Resources and Support Systems

This section will examine the availability and access to resources that are critical for agricultural success. Understanding women's access to various agricultural inputs is vital for evaluating their productivity and income.

- **Access to Credit and Loans:** Women will be asked whether they have access to agricultural loans, credit, or subsidies. This section will explore how financial resources influence women's ability to scale their agricultural activities and invest in productivity-enhancing tools.
- **Training and Extension Services:** Respondents will be asked about their access to training on modern farming techniques, agricultural extension services, or government schemes. This will help assess the level of education and exposure women have to modern agricultural practices.
- **Access to Technology:** Women will be asked whether they have access to modern agricultural technologies, such as machinery or advanced irrigation systems. This will shed light on technological barriers women face in improving productivity.

d. Socio-Cultural and Gendered Aspects

This section will explore the socio-cultural dynamics and how gender roles influence women's involvement in agriculture:

- **Division of Labor:** The questionnaire will explore how agricultural tasks are divided within the household, specifically focusing on women's roles and whether they have equal participation in decision-making processes.
- **Cultural Barriers:** Respondents will be asked about any cultural barriers they face, such as family expectations, gender norms, or social pressures, that restrict their freedom to engage fully in agricultural work.
- **Impact of Domestic Responsibilities:** The role of domestic duties, such as child-rearing and household chores, will be explored to assess how they interfere with or complement women's agricultural work.

e. Economic Impact and Empowerment

This section will assess how women's agricultural work contributes to their economic empowerment and household income:

- **Economic Independence:** Women will be asked whether they have financial independence from their husbands or family members. This question will help gauge women's autonomy in managing their earnings.
- **Livelihood Stability:** Participants will be asked about the stability of their agricultural income, particularly during off-seasons, and whether they rely on other income sources. This will provide insights into the resilience of women's livelihoods in rural Kurukshetra.

f. Challenges and Constraints

This final section will address the challenges women face in their agricultural work and the barriers that prevent them from achieving greater economic stability:

- **Seasonal Fluctuations:** Participants will be asked about how seasonal variations in agricultural productivity affect their livelihoods.
- **Access to Land Ownership:** Questions will explore whether women face challenges in land ownership and how this affects their capacity to participate in or benefit from agricultural activities.
- **Domestic Violence or Discrimination:** Women will be asked about their experiences with domestic violence or discrimination, providing insights into the broader social and gender dynamics that affect their ability to engage in agricultural work.

3. Key Insights and Data Analysis

The structured questionnaire will allow to focus on key insights, such as:

- **Economic Contribution of Women:** The questionnaire will provide quantitative data that can be analyzed to determine the extent of women's contribution to household income and agricultural production.
- **Patterns in Land Ownership and Access to Resources:** By analyzing responses related to land ownership and resource access, the study will be able to identify the structural barriers women face in enhancing their agricultural productivity.

- **Impact of Education and Training:** The questionnaire will allow the researcher to assess the link between education, training, and women's agricultural productivity and economic empowerment.
- **Gendered Labor and Decision-Making Power:** Insights into how household duties, gender roles, and decision-making power impact women's agricultural participation will help understand the socio-cultural barriers that women face.

The responses from the 200 women will be quantitatively analyzed to identify patterns and correlations that support the study's hypotheses. This will result in actionable insights that can inform policies, development programs, and interventions aimed at empowering women in agriculture.

The utilization of structured questionnaires will be a highly effective and efficient data collection method for this study. Given the large sample size of 200 participants, the structured questionnaire will provide standardized, quantifiable, and comparable data on women's involvement in agriculture in Kurukshetra. The questionnaire will be designed to capture a wide range of variables—socio-demographic, economic, cultural, and gendered—which will be critical for understanding the challenges and opportunities that women face in agricultural labor. Through this structured approach, the research will generate robust insights that will inform policy recommendations and support efforts to improve the livelihoods of women in agriculture in Haryana.

3.4.2 Focus Group Discussions and In-Depth Interviews for Qualitative Understanding:

Qualitative methods like Focus Group Discussions (FGDs) and In-Depth Interviews (IDIs) are essential tools for understanding the complexities of human experiences in social and cultural contexts. In this research study, focusing on "Women Livelihood in Agriculture: A Sociological Study in Kurukshetra District, Haryana," these methods will be pivotal in exploring the lived experiences of women involved in agricultural work. While quantitative methods, such as structured questionnaires, will provide numerical data, qualitative techniques like FGDs and IDIs allow for a deeper exploration of the subjective experiences, social dynamics, and personal narratives that shape women's roles in agriculture.

This section explores how the combination of FGDs and IDIs will contribute to understanding the sociological aspects of women's livelihoods in agriculture in Kurukshetra District. The sample for this study will consist of 200 participants, ensuring broad representation across

various socio-economic groups and agricultural backgrounds. These qualitative methods will help generate insightful data that cannot be fully captured through numerical data alone. The insights garnered will enhance the overall understanding of how women's agricultural work intersects with their socio-economic conditions, cultural norms, and gendered roles.

1. The Role of Qualitative Data in Sociological Research

Qualitative research techniques are indispensable in exploring the complexities of gender roles, labor divisions, and socio-cultural influences that cannot be easily quantified. In the context of women's involvement in agriculture, qualitative data helps to uncover the subjective dimensions of experience, such as personal motivations, family dynamics, and cultural expectations. This approach offers a comprehensive view of women's agricultural activities and their role in family income generation; while also addressing the challenges and barriers they face due to societal norms and limitations in access to resources.

Focus Group Discussions and In-Depth Interviews provide a rich, detailed exploration of these issues, allowing participants to express their views in their own terms. These methods complement quantitative data by highlighting the human elements behind the numbers, revealing how individual women experience and navigate their roles in agriculture, and how their socio-economic and cultural contexts shape these experiences.

a. Focus Group Discussions (FGDs)

Focus Group Discussions (FGDs) are interactive group sessions that allow participants to engage in discussions around specific themes related to the study. These discussions are designed to be participatory, with individuals sharing their personal experiences, perceptions, and opinions. FGDs provide an opportunity to observe group dynamics and how individuals' views are influenced by peer interactions. This group-based format is especially valuable for exploring community-level perspectives and understanding the collective social norms that govern women's roles in agriculture.

b. In-Depth Interviews (IDIs)

In-Depth Interviews (IDIs) are one-on-one conversations that enable the exploration of more personal, detailed, and sensitive topics related to women's agricultural labor. These interviews offer a safe space for women to share their thoughts in greater detail, allowing the researcher to probe deeper into specific issues such as economic challenges, decision-making power, access to resources, and family dynamics. By providing individualized attention, IDIs can

reveal the individual motivations and barriers women face in the context of their agricultural work.

2. The Process of Conducting FGDs and IDIs

The process of conducting Focus Group Discussions and In-Depth Interviews will be organized in a manner that ensures data collection is thorough, efficient, and ethical. Each stage will be carefully planned to guarantee that the participants' voices are accurately captured and their experiences understood.

a. Focus Group Discussions: Design and Execution

1. FGD Participant Selection:

In keeping with the study's sampling framework, participants for the FGDs will be selected through purposive sampling, focusing on women from a range of socio-economic backgrounds and different roles in agriculture. The sample will reflect the diversity of the community, including:

- Women of different age groups (young, middle-aged, elderly)
- Women from different marital statuses (married, widowed, single)
- Women involved in various types of agricultural work (farming, labor, land management)
- Women from different economic levels (low, middle, and high-income)

This purposive selection ensures that the FGDs will represent a wide array of experiences and perspectives.

2. FGD Structure:

The FGDs will follow a semi-structured approach, with a discussion guide outlining key themes and questions to explore. However, the open nature of the discussion will allow participants to bring in their own perspectives and share experiences that may not have been anticipated. Topics covered will include:

- Gendered division of labor in agriculture and its impact on women's roles.
- Access to resources, including land, credit, education, and training.
- Barriers women face in participating fully in agricultural decision-making.

- Community perceptions of women's involvement in farming and agricultural work.

Each FGD will involve 6-10 participants, providing a balance between effective group interaction and ensuring all voices are heard. These discussions will be 1-2 hours in length and conducted in a comfortable and non-threatening environment to encourage openness.

3. Data Collection during FGDs:

During the FGDs, the key insights shared by participants will be noted down in real-time by the research team, ensuring that all important points are captured accurately. While no audio recordings will be made, detailed notes will be taken during the discussions to record participant responses, important quotes, and group dynamics. The researcher will also observe non-verbal cues, such as body language and tone of voice, which may provide additional insights into participants' attitudes and emotions. After each FGD, the notes will be transcribed, and the insights will be analyzed for recurring themes and patterns.

b. In-Depth Interviews: Design and Execution

1. IDI Participant Selection:

A subset of women from the FGDs will be selected for In-Depth Interviews (IDIs), ensuring that a broad spectrum of experiences is represented. The selection criteria will prioritize women who:

- Have unique experiences or challenges related to agriculture.
- Are actively involved in agricultural decision-making.
- Represent a diverse range of socio-economic backgrounds and agricultural practices.

This purposive selection will ensure that the IDIs provide a deeper understanding of the more specific issues faced by women in the region.

2. Structure of In-Depth Interviews:

The IDIs will be semi-structured, allowing the interviewee to share their experiences freely while ensuring that specific key topics are addressed. The flexibility of IDIs will enable the researcher to probe deeper into responses and explore emerging themes that may not have been anticipated. Topics of discussion will include:

- Personal experiences with agricultural labor and its impact on their livelihoods.

- Decision-making power within the household and agricultural activities.
- Economic challenges, such as access to credit, markets, and resources.
- Social and cultural expectations that influence women's roles in agriculture.
- Government policies and their effect on women's empowerment in the agricultural sector.

Each IDI will last approximately 45 minutes to 1 hour, and the interviews will take place in private settings to ensure comfort and confidentiality.

3. Data Collection during IDIs:

During the IDIs, the key insights shared by the interviewee will be noted down carefully. Detailed field notes will be taken to capture the responses, key quotes, and observations made during the interview. Since the IDIs are designed to allow for a deep dive into personal experiences, the researcher will focus on capturing the essence of the conversation while ensuring that each participant's story is accurately reflected.

3. Benefits and Effectiveness of FGDs and IDIs in the Study

a. Understanding Social Contexts

FGDs and IDIs allow for a deeper exploration of the social, cultural, and economic factors that influence women's roles in agriculture. For example, FGDs will reveal how community norms shape the division of labor between men and women in farming activities. Discussions may bring to light the pressures that women face to conform to traditional gender roles, and the barriers that prevent them from engaging more fully in decision-making.

b. Capturing Individual and Group Dynamics

While group dynamics during FGDs can reveal shared experiences and collective perceptions, IDIs will provide individual participants with the opportunity to share personal, sensitive stories that they may not feel comfortable discussing in a group setting. This distinction allows the researcher to gain a comprehensive understanding of both group-level trends and individual experiences.

c. Informing Policy and Interventions

The insights obtained from the FGDs and IDIs will inform recommendations for policy changes or interventions aimed at improving the livelihoods of women in agriculture. By uncovering

barriers to women's empowerment and identifying successful coping strategies, the research will provide a foundation for targeted programs to enhance women's economic opportunities and social standing in agricultural communities.

Focus Group Discussions and In-Depth Interviews will be central to gaining a deeper, more contextual understanding of the experiences of women involved in agriculture in Kurukshetra District. These qualitative methods will complement the quantitative data obtained through structured questionnaires and provide a rich and nuanced perspective on the socio-economic, cultural, and gendered dimensions of women's agricultural work. By capturing the voices, stories, and experiences of women from diverse backgrounds, the study will contribute valuable insights into the factors that shape women's roles in agriculture and inform policies and interventions that can improve their livelihoods.

3.5 Data Analysis Techniques and Ethical Considerations:

3.5.1 Statistical and Thematic Analysis of Collected Data:

Data analysis is an essential part of this research, as it translates the collected data into meaningful insights that address the core objectives of the study. Given the focus on women's livelihood in agriculture in Kurukshetra district, Haryana, this study will employ descriptive statistical analysis and thematic analysis to interpret both quantitative and qualitative data. The sample size for the study comprises 200 women participants engaged in agricultural and allied activities, ensuring a diverse range of perspectives and experiences.

By using a simple and effective approach to data analysis, this study aims to present findings that are not only reliable but also practical and easy to interpret. Descriptive statistics will be used for quantitative insights, while thematic analysis will be used for qualitative findings, making the study comprehensive and multidimensional.

Statistical Analysis of Collected Data

1. Descriptive Statistical Analysis

For the quantitative data collected through structured questionnaires, descriptive statistical analysis will be used. This is one of the simplest yet most effective techniques to summarize and interpret numerical data. Descriptive statistics involve organizing, presenting, and interpreting data in a way that helps identify trends, patterns, and general characteristics of the population being studied.

The analysis will focus on the following:

- **Frequency Distributions:** This will help in understanding how often a particular response appears in the dataset. For instance, the number of women engaged in different types of agricultural work (e.g., crop production, animal husbandry, dairy farming) will be categorized using frequency tables.
- **Percentages and Proportions:** These will be used to represent the share of women involved in specific agricultural activities, access to credit facilities, land ownership, and participation in government schemes.
- **Averages (Mean, Median, and Mode):** These measures will help in understanding factors such as average income from agriculture, average number of working hours per day, and average landholding size among women farmers.
- **Comparison Between Groups:** Descriptive analysis will also be used to compare responses based on **age groups, educational levels, and socio-economic backgrounds**, helping to highlight variations in experiences.

2. Implementation of Descriptive Statistical Analysis

The collected numerical data will be analyzed using MS Excel and simple data visualization techniques such as tables, bar charts, and pie charts. The process of conducting the analysis will include:

- **Data Cleaning and Organization:** The responses will be reviewed to check for any missing or inconsistent values. The valid responses will then be categorized and coded for analysis.
- **Tabulation of Data:** The responses will be grouped into categories such as employment type, income level, education level, and land ownership status.
- **Graphical Representation:** Charts and graphs will be used to present the findings in an easy-to-understand manner.
- **Interpretation of Trends:** The final step will involve interpreting the observed trends to draw meaningful conclusions about women's roles, opportunities, and challenges in agriculture.

3. Effectiveness of Descriptive Statistical Analysis in the Study

Descriptive statistical analysis is one of the easiest and most practical methods to implement in research. It provides a clear, concise, and visual representation of key findings without the need for complex mathematical computations. The benefits of this technique in the current study include:

- **Ease of Interpretation:** Since the study involves women farmers with diverse educational backgrounds, using simple numerical summaries ensures that the findings are easy to understand and communicate.
- **Quick Analysis and Presentation:** Descriptive statistics allow for fast analysis and help in summarizing large datasets effectively.
- **Reliable for Decision-Making:** Policymakers and stakeholders can use the results for targeted interventions aimed at improving women's livelihoods in agriculture.

Thematic Analysis of Collected Data

1. Understanding Thematic Analysis in This Study

For the qualitative data obtained through focus group discussions (FGDs) and in-depth interviews, thematic analysis will be employed. This method helps in identifying, analyzing, and interpreting patterns or themes within the qualitative data.

Thematic analysis is an effective way to extract insights from personal experiences, beliefs, and perceptions, making it ideal for understanding the social, cultural, and economic challenges faced by women in agriculture.

2. Implementation of Thematic Analysis

Thematic analysis will be conducted through the following simple and structured steps:

- **Data Familiarization:** The discussions and interviews will be carefully reviewed, and key insights will be noted down.
- **Initial Coding:** Key phrases, recurring words, and common ideas will be identified and assigned preliminary codes.

- **Categorization of Themes:** The identified codes will be grouped into broader themes. Common themes expected in this study include:
 - Gender Disparities in Agricultural Wages
 - Access to Agricultural Resources and Credit Facilities
 - Decision-Making Power and Land Ownership
 - Challenges of Workload and Work-Life Balance
 - Perceptions of Women's Role in Agriculture
- **Analysis and Interpretation:** Each theme will be analyzed in-depth, and findings will be supported with examples and direct quotes from participants.

3. Effectiveness of Thematic Analysis in the Study

Thematic analysis is one of the most practical and flexible methods for qualitative research, making it well-suited for this study. The advantages of using this method include:

- **Capturing Women's Voices:** Thematic analysis helps in highlighting real-life experiences and challenges faced by women in agriculture, which may not be visible in numerical data.
- **Easy to Implement:** Unlike complex qualitative techniques, thematic analysis can be conducted systematically using manual review and categorization, making it practical and time-efficient.
- **Provides Context to Statistical Findings:** Thematic insights help explain why certain statistical trends exist, offering a deeper understanding of women's realities in agriculture.

Integration of Descriptive Statistical and Thematic Analysis for a Holistic Study

By combining descriptive statistical analysis with thematic analysis, this study will provide a well-rounded and holistic perspective on women's livelihood in agriculture.

- Descriptive statistics will offer numerical trends on factors such as income levels, working hours, land ownership, and access to resources.
- Thematic analysis will provide narrative-based insights into women's lived experiences, socio-cultural barriers, and policy implications.

Together, these methods will ensure that the study does not just present numerical data but also captures the deeper realities of the participants. The findings will be valuable for policymakers, researchers, and organizations working towards gender equality and rural development in Haryana.

The use of descriptive statistical analysis and thematic analysis in this study ensures that both quantitative and qualitative aspects of women's livelihoods in agriculture are effectively captured. With a sample size of 200 women participants, these methods will help in presenting a clear, concise, and impactful analysis that aligns with the study's objectives.

By employing simple yet effective analytical techniques, this research will contribute to a better understanding of women's roles in agriculture, highlight key challenges, and provide actionable insights for improving their economic participation and overall well-being in the Kurukshetra district of Haryana.

3.5.2 Ensuring Confidentiality and Informed Consent of Participants:

Ethical considerations play a crucial role in ensuring that research is conducted responsibly, fairly, and in a manner that protects the rights and dignity of participants. In this study, which examines women's livelihoods in agriculture in Kurukshetra district, Haryana, ethical compliance is particularly significant because the participants belong to diverse socio-economic backgrounds, and their responses may contain sensitive personal and financial information.

To uphold ethical integrity, this study will ensure confidentiality and obtain informed consent from all 200 participants before data collection. Special care will be taken to ensure that participants understand the purpose, scope, and potential impact of the research while also safeguarding their personal information from unauthorized access.

Understanding Informed Consent in Research

1. Definition and Importance of Informed Consent

Informed consent refers to the process of ensuring that participants voluntarily agree to participate in the research after fully understanding its objectives, methodology, potential risks, and benefits. It is a fundamental ethical requirement that ensures transparency, respect, and participant autonomy in research.

Since this study focuses on women engaged in agriculture, who may have varying levels of literacy and awareness about research ethics, obtaining informed consent in an accessible and culturally sensitive manner is essential. Participants will be provided with detailed consent forms, which will be explained in simple terms to ensure they fully comprehend their rights and obligations before signing.

2. Process of Obtaining Informed Consent

To ensure that informed consent is obtained ethically and effectively, the following steps will be undertaken:

- **Developing a Comprehensive Informed Consent Form:** The consent form will clearly outline:
 - The purpose of the study
 - The methods of data collection (structured questionnaires, interviews, focus group discussions)
 - The expected duration of participation
 - The voluntary nature of participation, with the right to withdraw at any stage
 - The confidentiality measures in place
 - The potential risks and benefits of participation
 - The contact details of the research team for any queries
- **Ensuring Accessibility and Comprehension:** Since literacy levels may vary among the participants, the informed consent document will be:
 - Available in Hindi and other local dialects for better comprehension
 - Explained verbally to those who may have difficulty reading
 - Clarified through a question-and-answer session before signing
- **Providing Adequate Time for Decision-Making:** Participants will not be rushed into making a decision. They will be given sufficient time to review the consent document and discuss any concerns before agreeing to participate.

- **Obtaining Written or Verbal Consent:**
 - **Written consent** will be obtained from participants who are comfortable signing the document.
 - **Verbal consent with a witness** will be recorded for those who may not be comfortable signing but are willing to participate.
- **Maintaining Copies of Consent Forms:** Signed consent forms will be securely stored in a locked cabinet or password-protected digital storage, ensuring restricted access only to authorized individuals.

Ensuring Confidentiality of Participants

1. Definition and Importance of Confidentiality

Confidentiality refers to protecting participants' identities and personal information from unauthorized access, misuse, or exposure. This is particularly critical in this study, as participants may share sensitive data related to income, employment conditions, land ownership, and gender-based challenges in agriculture.

Ensuring confidentiality fosters trust, openness, and ethical integrity, allowing participants to share their experiences without fear of repercussions from family members, employers, or the community.

2. Measures to Safeguard Confidentiality

To maintain the privacy and security of participant information, the following confidentiality measures will be implemented:

- **Anonymization of Participant Data:**
 - Personal identifiers such as names, addresses, and contact details will not be included in research reports.
 - Each participant will be assigned a unique identification code to maintain anonymity.
 - Data will be stored without direct personal identifiers to prevent identification of individuals.
- **Secure Storage of Data:**

- Physical data (questionnaires, interview notes) will be stored in a locked file cabinet accessible only to authorized personnel.
- Digital data will be password-protected and encrypted to prevent unauthorized access.
- Backups of data will be stored in secured cloud storage with restricted access.
- **Controlled Access to Data:**
 - Only the research scholar will have access to the collected data.
 - No data will be shared with third parties without explicit participant consent.
 - Findings will be reported in aggregated form, ensuring that no individual participant can be identified.
- **Ethical Handling of Audio and Written Data:**
 - If interviews or discussions are transcribed, participant names will be replaced with pseudonyms.
 - Direct quotes used in the final research report will be anonymized to prevent identification.

Why Confidentiality and Informed Consent Are Necessary

Maintaining ethical research standards by ensuring informed consent and confidentiality is crucial for several reasons:

1. **Protecting Participant Rights and Dignity:** Women involved in agriculture may face socio-economic vulnerabilities, and revealing personal information without safeguards could expose them to risks such as discrimination or societal backlash.
2. **Encouraging Honest and Open Participation:** If participants are assured that their responses remain confidential, they are more likely to share genuine experiences, leading to richer and more meaningful data collection.
3. **Building Trust Between Researchers and Participants:** Ethical considerations help establish mutual respect and trust, ensuring cooperation and willingness to contribute.

4. **Preventing Potential Harm:** Unauthorized disclosure of financial or land-related data could negatively impact the participants. Safeguarding such information protects them from possible exploitation.
5. **Compliance with Ethical Guidelines:** Ethical approval for the study will be sought from relevant academic and research ethics committees, ensuring adherence to global ethical research standards.

Consent and Confidentiality Forms: Key Components

The consent and confidentiality forms will contain the following sections:

1. **Title of Study:** Clearly stating the research topic: “*Women Livelihood in Agriculture: A Sociological Study in Kurukshetra District, Haryana.*”
2. **Purpose of the Study:** A brief explanation of why the study is being conducted.
3. **Voluntary Participation Statement:** Explicitly stating that participants can withdraw at any time without any penalties.
4. **Data Usage and Confidentiality Statement:** Explaining how data will be stored, anonymized, and reported.
5. **Potential Benefits and Risks:** Informing participants about possible advantages (awareness generation, policy recommendations) and minimal risks (time commitment, potential discomfort in sharing personal experiences).
6. **Participant Agreement Section:** A space for the participant to sign or provide verbal consent in the presence of a witness.
7. **Contact Information of the Research Scholar:** Providing a way for participants to ask questions or raise concerns before and after participation.

Ensuring confidentiality and informed consent in research is not just an ethical requirement but a moral obligation to protect participants' rights and well-being. In this study, where 200 women engaged in agriculture will be surveyed, maintaining privacy and obtaining voluntary, well-informed participation will be a priority.

Through proper documentation, secure data storage, anonymity measures, and ethical handling of sensitive information, this study will uphold the highest ethical standards. By doing so, it will contribute to a credible, trustworthy, and impactful research outcome, ultimately advocating for improved policies and support systems for women in agriculture in Kurukshetra district, Haryana.

Chapter 4

Findings, Discussions and Results

4.1 Introduction:

The chapter on Findings, Results, and Discussions is a crucial part of this research study, presenting the detailed analysis of the data collected from 200 women engaged in agricultural activities in Kurukshetra district, Haryana. This chapter aims to interpret the results obtained through structured questionnaires, focus group discussions (FGDs), and in-depth interviews, providing an extensive evaluation of the socio-economic conditions, financial autonomy, employment status, decision-making power, working conditions, health concerns, and overall livelihood of women in agriculture. The findings not only highlight the existing realities of women's participation in agriculture but also provide valuable insights into the challenges and opportunities they encounter in the agricultural sector.

4.4.1 Overview of Data Collection Methods and Implementation:

The data for this study was collected using a mixed-method approach, incorporating both quantitative and qualitative techniques to ensure a comprehensive understanding of the subject matter. The structured questionnaire, administered to all 200 participants, captured quantifiable data regarding demographics, economic status, agricultural engagement, financial decision-making, working conditions, and access to resources. The focus group discussions (FGDs) and in-depth interviews complemented this quantitative data by providing deeper insights into the lived experiences, perceptions, and opinions of women farmers regarding their role in agriculture.

To ensure data accuracy and reliability, the data collection process followed a systematic approach, including:

- **Preliminary Survey and Pilot Testing:** Before conducting the full-scale survey, a pilot study was carried out to refine the questionnaire and discussion guide, ensuring clarity, relevance, and feasibility.
- **Structured Questionnaire Administration:** Each participant was interviewed using a standardized questionnaire designed to cover all aspects of their livelihood in agriculture.

- **Focus Group Discussions (FGDs):** Group discussions were conducted to encourage participants to share their collective experiences, social challenges, and community-based insights.
- **In-Depth Interviews:** Selected participants were interviewed individually to capture personal narratives, detailed experiences, and unique perspectives that might not emerge in group discussions.
- **Data Recording and Note-Taking:** The key insights obtained from discussions and interviews were systematically documented, ensuring a thorough qualitative analysis.

The collected data was then processed using statistical and thematic analysis techniques to derive meaningful interpretations, which are discussed in this chapter.

4.1.2 Objective and Scope of Findings:

The findings presented in this chapter are aimed at answering the following key research questions:

1. What is the socio-economic profile of women involved in agriculture in Kurukshetra district?
2. What are the primary agricultural activities undertaken by women, and how do they contribute to household income?
3. What is the extent of land ownership and access to agricultural resources among women?
4. What financial autonomy do women possess in terms of income control, savings, and decision-making?
5. How do gender roles influence decision-making authority in both household and agricultural activities?
6. What are the working conditions faced by women in agriculture, and how do they impact health and well-being?
7. To what extent do women have access to education, skill development programs, and government schemes?

8. What challenges and opportunities exist for improving the livelihood of women in agriculture?

These research questions form the foundation of the analysis, allowing a structured presentation of findings across various dimensions.

4.1.3 Structure of the Chapter:

This chapter is systematically divided into multiple sections, each focusing on a key thematic area of the research. The sections include:

- **Socio-Demographic Profile of Participants:** This section provides an overview of the respondents' age, marital status, educational background, type of family, and household composition, offering a demographic perspective on the sample population.
- **Participation in Agricultural Activities:** This part examines the type of agricultural work performed by women, time allocation, mechanization, and seasonal workload variations, highlighting the role of women in farming and allied sectors.
- **Land Ownership and Access to Agricultural Resources:** This section discusses the patterns of land ownership among women, their ability to access essential farming inputs, credit, and agricultural schemes, along with challenges in land inheritance.
- **Financial Autonomy and Economic Contributions:** Here, the focus is on household income sources, wage disparities, access to banking services, financial control, and women's involvement in financial decision-making.
- **Decision-Making Authority in Agriculture and Household Matters:** This section explores the extent of women's involvement in farm-related and household financial decisions, shedding light on their level of empowerment in family and agricultural settings.
- **Working Conditions and Health Impacts:** This section highlights the physical labor, exposure to chemicals, safety measures, and occupational health concerns faced by women in agriculture.
- **Education, Skill Development, and Training:** This part examines literacy levels, participation in training programs, and barriers to accessing educational resources, assessing their impact on agricultural knowledge and financial management.

- **Government Policies and Support Programs:** This section evaluates awareness and effectiveness of government schemes, challenges in scheme implementation, and policy recommendations based on participant experiences.
- **Key Challenges and Opportunities for Women in Agriculture:** A summary of structural, economic, and social challenges faced by women, along with potential solutions to improve their livelihood prospects.

4.1.4 Data Interpretation and Presentation:

The findings are presented using both quantitative and qualitative approaches.

1. Quantitative Analysis:

- Data collected through structured questionnaires is analyzed using statistical tools and presented in the form of tables, bar charts, pie charts, and graphs to illustrate key trends.
- Comparative analysis is conducted to identify patterns and relationships between variables, such as education level and financial autonomy.

2. Qualitative Analysis:

- Thematic analysis of FGDs and in-depth interviews is performed to extract key narratives, recurring themes, and significant insights regarding women's roles, struggles, and aspirations in agriculture.
- Direct participant quotes are incorporated to emphasize personal experiences and social realities.

4.1.5 Significance of Findings in Policy and Practice:

The results of this study provide critical insights for policymakers, development organizations, and agricultural institutions aiming to enhance women's participation in agriculture. Key implications include:

- Strengthening land rights and financial inclusion for women farmers.
- Addressing gender-based wage disparities in agriculture.
- Promoting skill development and entrepreneurship among rural women.
- Enhancing access to government agricultural schemes and support services.
- Improving healthcare facilities for women engaged in agricultural labor.

This chapter serves as a comprehensive synthesis of the data collected, offering a thorough examination of the various aspects influencing women's livelihood in agriculture. The integration of quantitative findings with qualitative insights ensures a well-rounded perspective on the challenges, roles, and contributions of women farmers in Kurukshetra district. The results presented herein form the basis for further discussions, policy recommendations, and future research directions aimed at enhancing the socio-economic status and empowerment of women in agriculture.

4.2 Quantitative Insights and Statistical Representation:

This section aims to provide a comprehensive quantitative analysis of the data collected from 200 women engaged in agricultural activities in Kurukshetra district, Haryana. The findings are systematically presented through statistical analysis, tabular representations, and various types of charts, including bar graphs, pie charts, line charts, and histograms, to illustrate the key trends and relationships among different variables. The insights presented in this section are derived from the responses recorded in the structured questionnaire, which was meticulously designed to capture various socio-economic, financial, and agricultural aspects affecting women's livelihood in the region.

The analysis in this section is conducted on a strong foundation of multiple critical aspects, including:

- Socio-Demographic Profile of Participants
- Participation in Agricultural Activities
- Land Ownership and Access to Agricultural Resources
- Financial Autonomy and Economic Contributions
- Decision-Making Authority in Agriculture and Household Matters
- Working Conditions and Health Impacts
- Education, Skill Development, and Training
- Key Challenges and Opportunities for Women in Agriculture

By quantifying responses, this section provides a data-driven understanding of the conditions in which women farmers operate. The statistical insights gained will serve as a foundation for further discussions in the next sections, where qualitative findings will complement these numerical representations to offer a comprehensive and in-depth perspective on women's roles, challenges, and opportunities in agriculture.

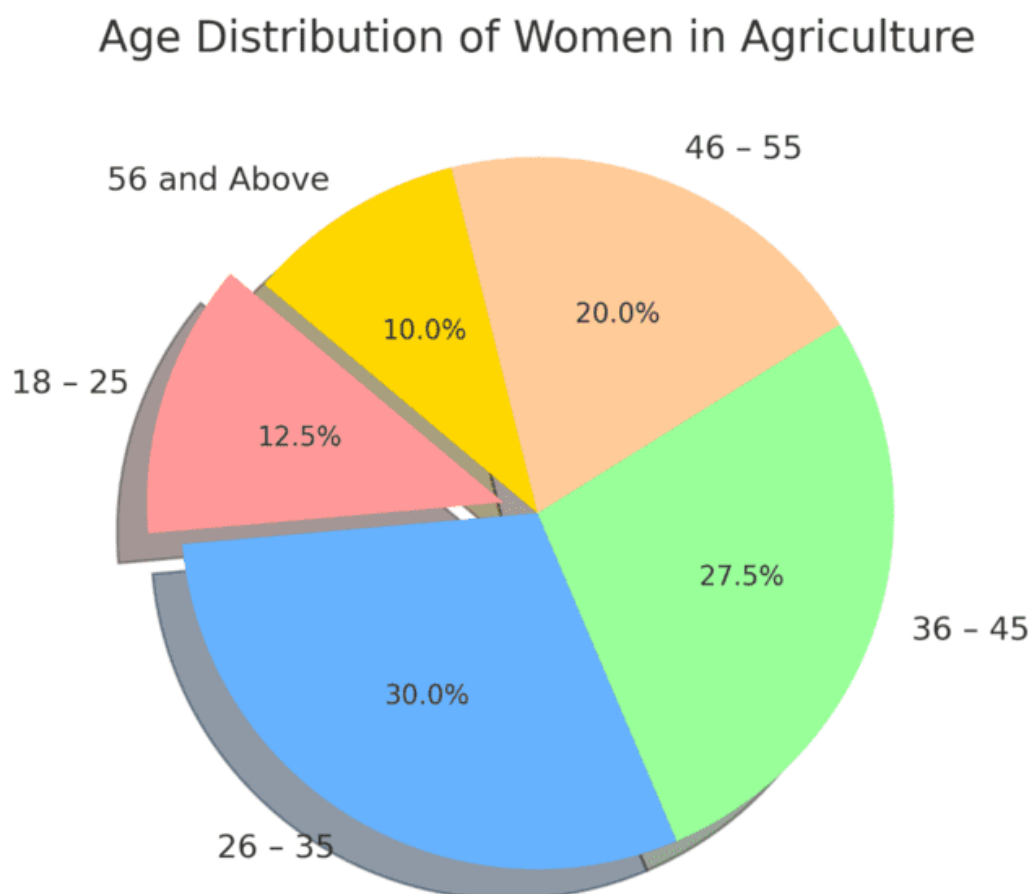
4.2.1 Socio-Demographic Profile of Participants:

4.2.1.1 Age Distribution of Participants:

Table 1: Age Distribution of Women in Agriculture (Kurukshetra District)

Age Group (Years)	Number of Participants	Percentage (%)
18 - 25	25	12.5
26 - 35	60	30.0
36 - 45	55	27.5
46 - 55	40	20.0
56 and Above	20	10.0

Chart 1: Age Distribution of Women in Agriculture (Kurukshetra District)



Understanding the age distribution of women engaged in agriculture is essential in assessing their level of participation, work burden, and future engagement trends in the farming sector. The table and chart above provide a well-structured breakdown of age groups actively involved in agricultural activities across the Kurukshetra district.

The highest proportion of women (30%) falls within the 26-35 years age bracket, making them the core contributors to agricultural labor. This group represents a crucial segment as they are at the peak of their physical capability and are often responsible for both farming and household responsibilities. Their significant presence suggests that agriculture remains a primary livelihood source for many young married women and newly independent female workers.

The 36-45 years age group (27.5%) also holds a strong presence, indicating that a large number of middle-aged women continue to participate actively in agricultural work. These women are likely to be experienced farmers, landowners, or involved in decision-making processes regarding farming practices. Their continued involvement highlights the sustained dependence on agriculture as a livelihood source in the district.

The 46-55 years category (20%) consists of women who have spent a considerable portion of their lives in agriculture. Their role may shift towards supervisory work, traditional farming methods, and mentoring younger workers. This group also represents women who may have physical constraints but still contribute significantly to agricultural tasks that require expertise and experience.

The 18-25 years group (12.5%), being the smallest working segment among younger women, indicates that fewer young women are actively engaged in agriculture, likely due to higher educational aspirations, urban migration, or diversification into non-agricultural jobs. This presents an opportunity to implement skill development programs and incentives to encourage their participation in modernized agricultural practices.

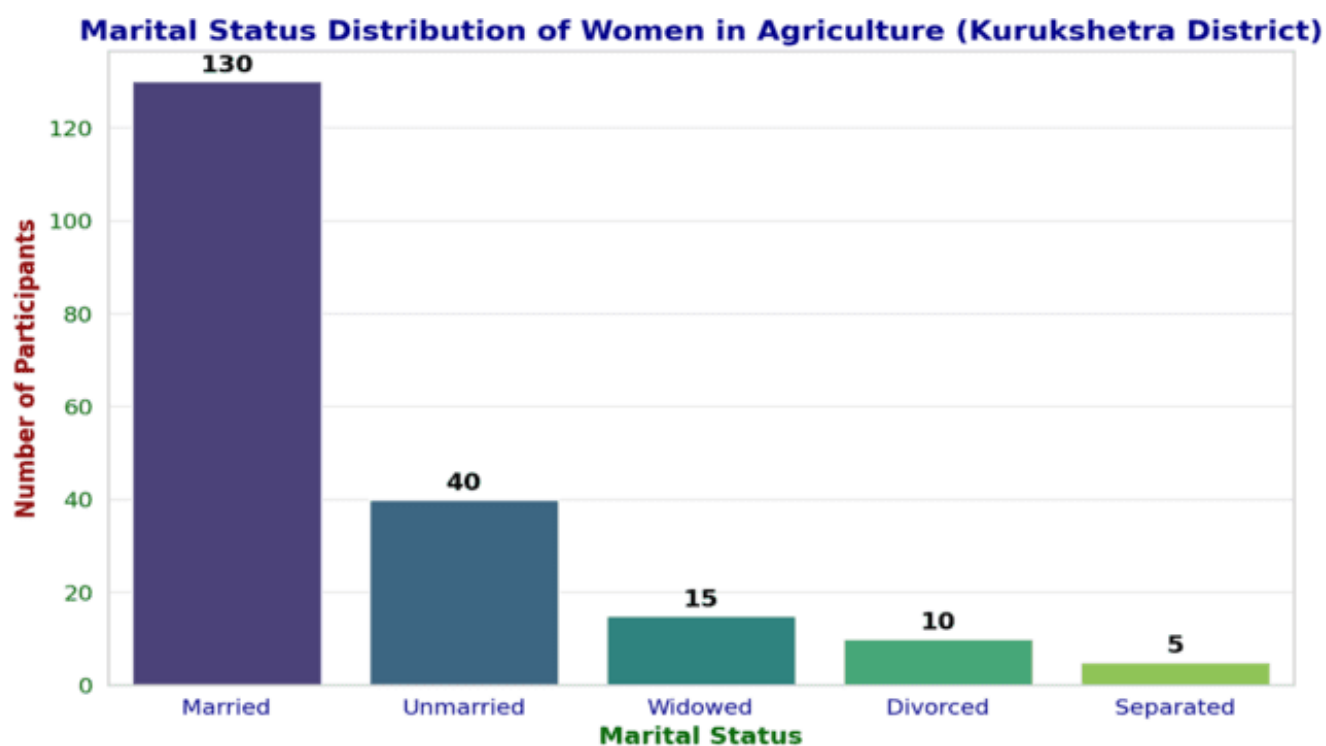
Lastly, the 56+ age group (10%) reflects a diminished involvement due to age-related constraints. However, many of these women continue to engage in agriculture through small-scale farming, household kitchen gardening, or advisory roles within their families. Their experience and knowledge remain valuable assets to the farming community.

4.2.1.2 Marital Status of Participants:

Table 2: Marital Status of Women in Agriculture (Kurukshetra District)

Marital Status	Number of Participants	Percentage
Married	130	65.0
Unmarried	40	20.0
Widowed	15	7.5
Divorced	10	5.0
Separated	5	2.5

Chart 2: Marital Status of Women in Agriculture (Kurukshetra District)



The marital status of women in agriculture provides deep insights into their social standing, economic dependence, and role in decision-making within rural households. The survey conducted among 200 women in the Kurukshetra district of Haryana revealed the following distribution:

A significant majority, 130 women (65%), are married, indicating that most women participating in agricultural activities are involved in shared family responsibilities. These women not only contribute labor but also assist in agricultural decision-making, household management, and livestock care. Married women often find themselves balancing farm work with domestic chores, making them integral to the socio-economic stability of rural agricultural households.

On the other hand, 40 women (20%) are unmarried, reflecting the presence of younger participants who are either assisting their families in farming or engaged in agricultural labor as a source of livelihood before marriage. This group represents the emerging workforce that may either continue in agriculture or transition to other sectors.

Additionally, 15 women (7.5%) are widowed, suggesting that many continue working in agriculture due to economic necessity. These women often take up full responsibility for their farms or depend on agricultural labor to sustain themselves after the loss of a spouse.

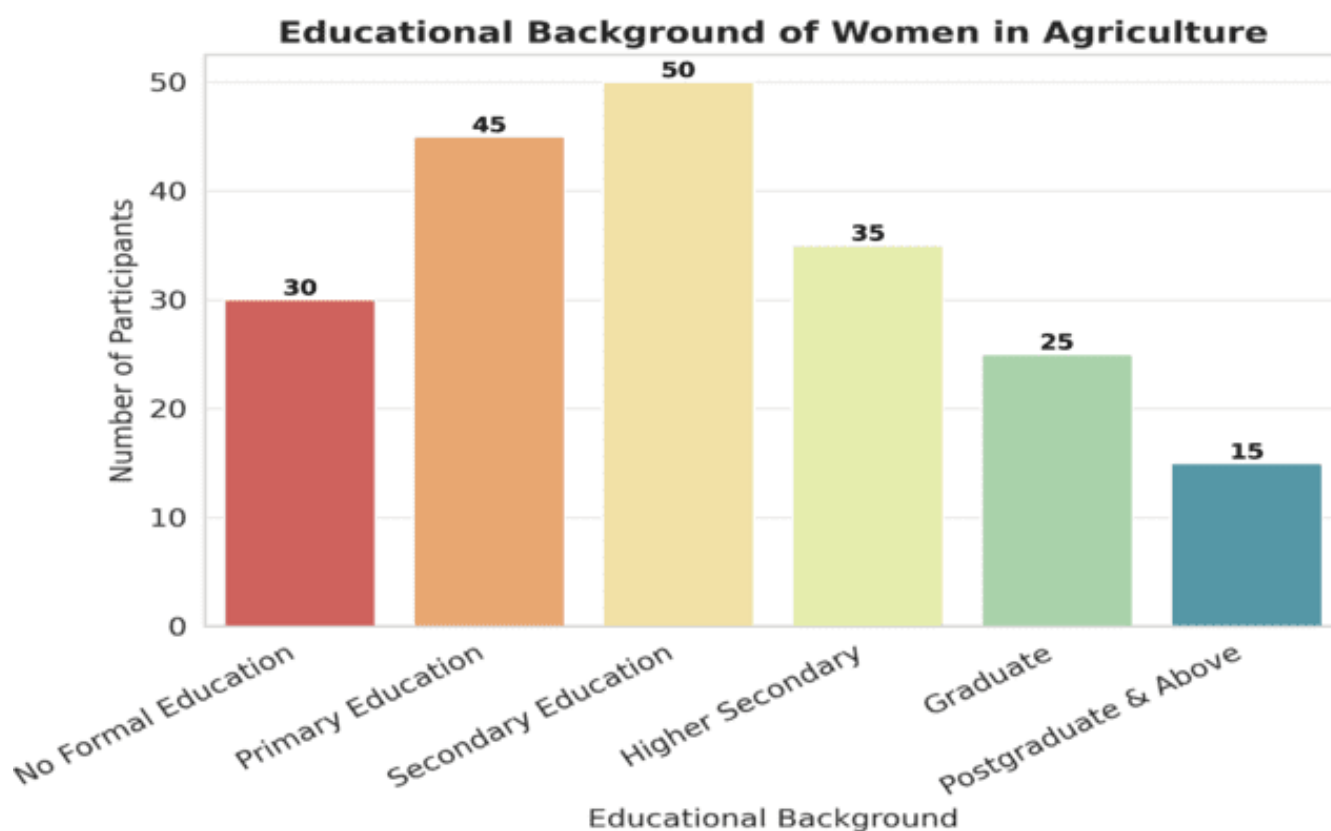
The survey also highlights the presence of 10 divorced women (5%) and 5 separated women (2.5%), emphasizing the challenges faced by single women managing agricultural work independently. Women in these categories may struggle with land ownership issues, social stigma, and limited access to financial resources, making them more vulnerable than their married counterparts.

4.2.1.3 Educational Background Status of Participants:

Table 3: Educational Background Status of Participants (Kurukshetra District)

Educational Background	Number of Participants	Percentage (%)
No Formal Education	30	15.0
Primary Education	45	22.5
Secondary Education	50	25.0
Higher Secondary	35	17.5
Graduate	25	12.5
Postgraduate & Above	15	7.5
Total	200	100.0

Chart 3: Educational Background Status of Participants (Kurukshetra District)



Education plays a vital role in shaping the livelihood opportunities and decision-making capabilities of women in agriculture. The above table and chart provide a comprehensive breakdown of the educational background of 200 women engaged in agriculture in Kurukshetra District, Haryana. The findings highlight a diverse range of educational qualifications, showcasing the distribution from no formal education to postgraduate levels.

The highest proportion of participants (50 women, 25%) have attained secondary education, indicating a strong basic literacy level among women in agriculture. This is followed by primary education holders (45 women, 22.5%), demonstrating that many women acquire some level of schooling before transitioning into agricultural labor or related activities. A significant portion, 35 women (17.5%), have completed higher secondary education, suggesting a gradual increase in educational attainment.

A striking observation is that 30 women (15%) have received no formal education, which could correlate with limited awareness of modern agricultural practices, financial management, and access to institutional support. This highlights the necessity for literacy programs and training initiatives to empower women in agriculture. On the other hand, 25 women (12.5%) are graduates, and a smaller percentage, 15 women (7.5%), have postgraduate or higher qualifications. These women are more likely to be engaged in supervisory roles, research-based agricultural work, or entrepreneurial activities such as agribusiness.

The bar chart visually captures these variations, emphasizing how secondary education is the most common educational level, followed by primary and higher secondary levels. The gradual decline in numbers as we move towards higher education levels suggests barriers such as socio-cultural norms, economic constraints, and prioritization of agricultural labor over formal education.

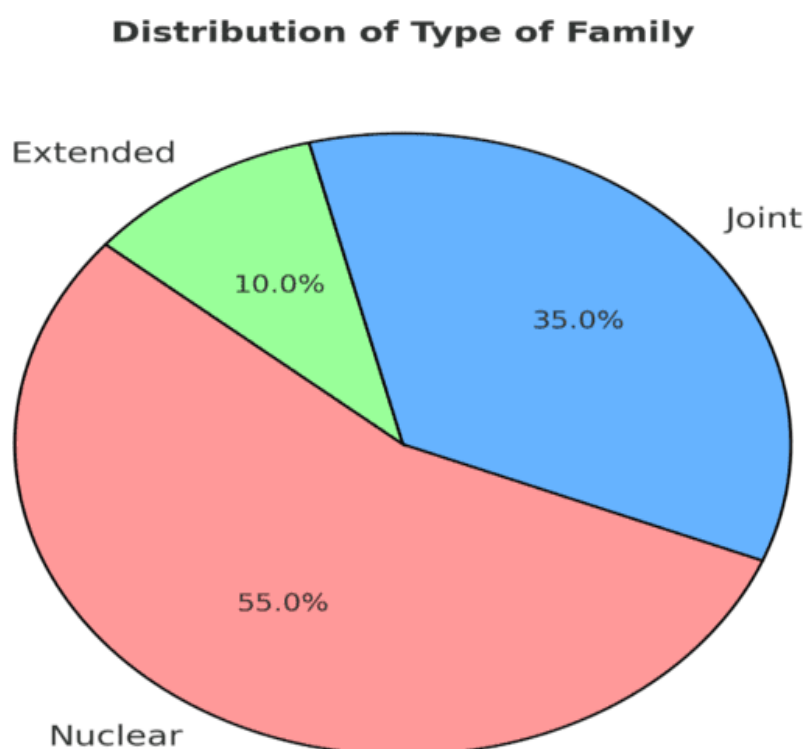
This data signifies a need for targeted educational policies, vocational training programs, and awareness campaigns to enhance skill development, promote financial literacy, and encourage higher education among women in the agricultural sector. By bridging the education gap, women can improve their productivity, adopt modern farming techniques, and elevate their socio-economic status within the agrarian economy.

4.2.1.4 Type of Family & Household Size:

**Table 4: Type of Family & Household Size Status of the Participants
(Kurukshetra District)**

Type of Family	Number of Households	Percentage (%)	Average Household Size
Nuclear	110	55	4.2
Joint	70	35	6.8
Extended	20	10	8.5
Total	200	100	-

**Chart 4: Type of Family & Household Size Status of the Participants
(Kurukshetra District)**



The socio-demographic profile of participants regarding the Type of Family & Household Size offers crucial insights into the family structure among women engaged in agriculture in Kurukshetra District, Haryana. Based on a sample size of 200 participants, the data highlights the dominance of the nuclear family system (55%), followed by joint families (35%), and extended families (10%).

A nuclear family structure, where women live with their spouse and children independently, accounts for the majority. This pattern aligns with the growing trend of individualistic and financially self-sustained family units in rural areas due to economic pressures, migration, and modernization of agricultural practices. The average household size in nuclear families is 4.2 members, indicating relatively smaller family units.

In contrast, joint families, where multiple generations cohabit, comprise 35% of households with an average household size of 6.8 members. This structure is still prevalent in rural Haryana, where land ownership, agricultural labor-sharing, and traditional values encourage larger families living together. Joint families often provide women with collective financial support, shared responsibilities, and social security, yet they may also impose traditional gender roles that limit women's autonomy in agricultural decision-making.

The extended family system represents a minority (10%), with the highest average household size of 8.5 members. These families often include grandparents, uncles, and cousins, forming multi-generational agricultural units where labor is distributed among various members. However, extended families may pose challenges in decision-making and resource allocation, affecting women's participation in independent farming activities.

The pie chart visualization further illustrates the dominance of nuclear families, highlighting the shift towards smaller, independent household structures. This trend suggests a potential increase in women's economic participation, as they may have greater control over farming decisions in nuclear family settings. Conversely, women in joint and extended families may experience higher dependency on family elders in agricultural management.

Overall, the analysis suggests a gradual shift towards nuclear family units in rural Haryana, influenced by economic factors, changing societal norms, and the increasing mechanization of agriculture. The structure of a family significantly impacts women's role in agriculture, affecting their access to resources, decision-making power, and financial independence. These insights are essential for formulating policies that empower women in agriculture, ensuring better livelihood opportunities, financial stability, and enhanced agricultural productivity.

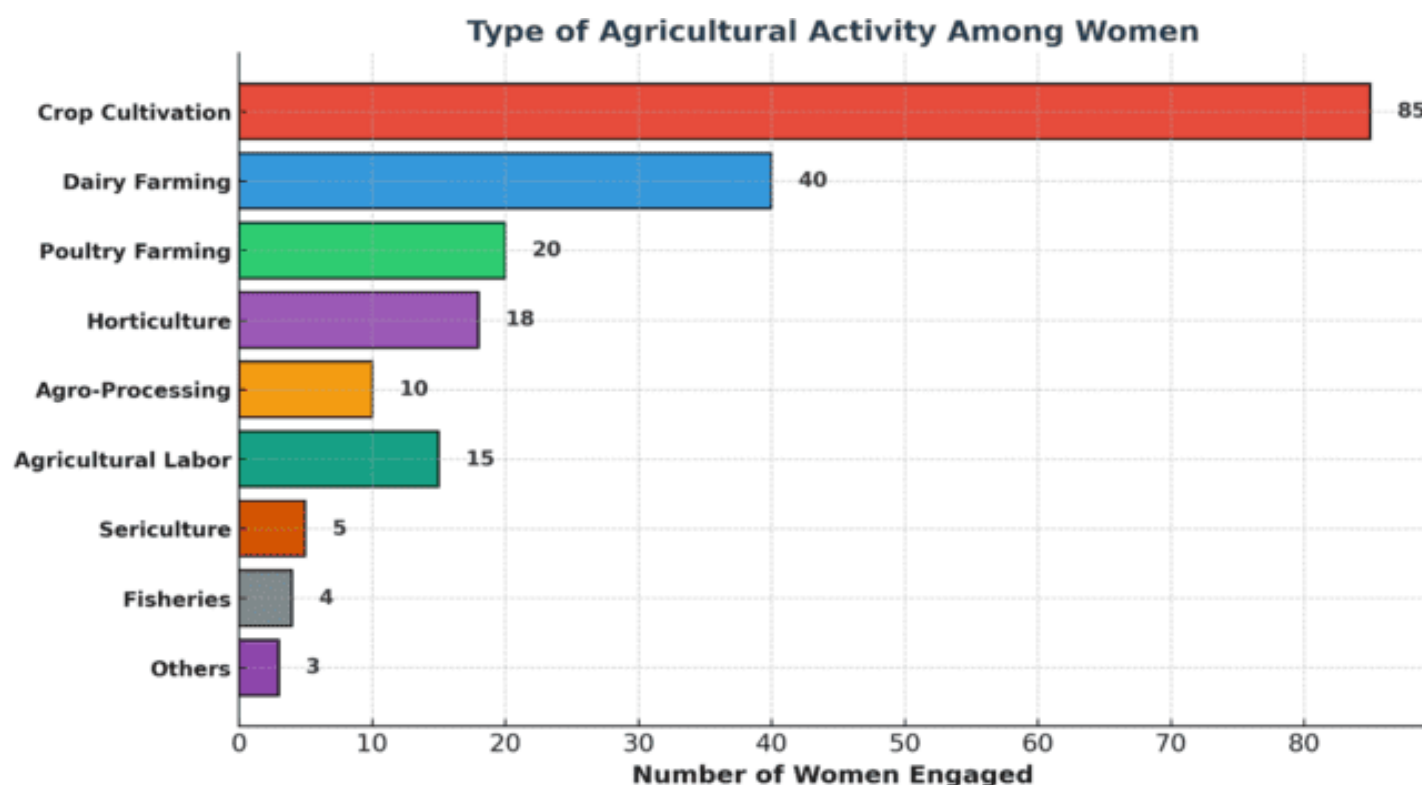
4.2.2 Agricultural Participation & Land Ownership:

4.2.2.1 Type of Agricultural Activity:

**Table 5: Types of agricultural activities undertaken by women
(Kurukshetra district)**

Type of Agricultural Activity	Number of Women Engaged	Percentage (%)
Crop Cultivation	85	42.5
Dairy Farming	40	20.0
Poultry Farming	20	10.0
Horticulture	18	9.0
Agro-Processing	10	5.0
Agricultural Labor	15	7.5
Sericulture	5	2.5
Fisheries	4	2.0
Others	3	1.5
Total	200	100.0

**Chart 5: Types of agricultural activities undertaken by women
(Kurukshetra district)**



The table and the clustered bar chart provide a comprehensive and detailed representation of the various agricultural activities in which women in Kurukshetra district are engaged. By analyzing the data, several key trends and patterns emerge, offering deeper insights into the nature and distribution of women's participation in agriculture. The representation not only highlights the dominant areas of involvement but also sheds light on the less explored domains, which may require further attention for policy development and empowerment initiatives. The variations across different types of agricultural activities indicate differences in accessibility, economic viability, skill requirements, and societal norms influencing women's roles in agriculture.

A major observation from the data is the dominance of crop cultivation, which stands out as the most common agricultural activity among women. The table and the clustered bar chart clearly depict that 42.5% of the total respondents (85 out of 200 women) are actively engaged in crop cultivation. This trend reflects the deeply embedded traditional roles that women have played in farming activities for generations. From sowing and weeding to harvesting and post-harvest processing, women contribute significantly to the agricultural production cycle. However, despite their crucial role, their contributions often remain undervalued and

unrecognized in formal economic structures. The dominance of crop cultivation among women could also be linked to land availability and social norms, where family-based farming is more accessible to women compared to other agricultural activities requiring independent ownership or specialized skills.

The second most prevalent agricultural activity is dairy farming, which accounts for 20% of the total women participants (40 out of 200). The data indicates that livestock management serves as an important secondary source of livelihood for rural women, contributing to household income stability. Women actively participate in milking, feeding, cleaning, and maintaining cattle health, making dairy farming a viable livelihood option. The participation in dairy farming highlights the economic potential of animal husbandry, particularly when women have access to financial assistance, cooperative networks, and support from government schemes promoting dairy entrepreneurship. However, many women involved in dairy farming still operate at a subsistence level, facing challenges related to low market prices, lack of proper storage facilities, and limited access to veterinary care.

Beyond crop cultivation and dairy farming, poultry farming (10%) and horticulture (9%) emerge as significant but secondary sources of livelihood. Poultry farming, which involves raising chickens, ducks, and other birds for egg and meat production, has seen a gradual rise among rural women as a low-investment, high-return business. The fact that only 10% of women engage in this sector suggests potential for growth if women are given access to better training, credit facilities, and market linkages. Similarly, horticulture, which includes the cultivation of fruits, vegetables, and floriculture, accounts for 9% participation. Horticulture provides higher economic returns compared to traditional crop farming, but its lower participation rate indicates possible barriers such as land availability, irrigation challenges, and a lack of technical expertise among women farmers.

The data also reflects limited participation in agro-processing (5%), agricultural labor (7.5%), sericulture (2.5%), fisheries (2%), and other activities (1.5%). The relatively lower engagement in agro-processing is particularly noteworthy, as it highlights a gap in value-addition and entrepreneurial opportunities for women. Agro-processing includes activities such as food preservation, packaging, and processing raw agricultural products into finished goods. Despite its potential to increase rural women's income, their participation remains minimal, likely due to limited infrastructure, lack of capital investment, and a lack of skill-based training in processing technologies. Similarly, agricultural labor (7.5%) suggests that some women are

involved in daily-wage farm work, indicating a section of the population that depends on low-paid, informal labor without security or ownership. Sericulture (2.5%) and fisheries (2%) also show low representation, possibly due to regional constraints, lack of awareness, and absence of supportive frameworks for women to enter these sectors. The 'Others' category (1.5%) could include emerging or less conventional agricultural activities such as organic farming, mushroom cultivation, or medicinal plant cultivation.

The clustered bar chart visually reinforces these findings by offering a clear comparative representation of women's participation across different agricultural activities. The bold and visually distinct bars highlight the extent to which crop cultivation and dairy farming dominate the agricultural landscape, while other activities remain relatively less explored. The stark contrast in participation levels among various categories suggests that the existing agricultural structure and socio-economic conditions significantly shape women's engagement in specific sectors. The bars for crop cultivation and dairy farming are noticeably larger and more pronounced, while those for fisheries, sericulture, and agro-processing appear significantly shorter, emphasizing the unequal distribution of opportunities and engagement. The bar chart further helps to instantly recognize the hierarchy of participation, making it an effective visual aid for policymakers, researchers, and development practitioners who aim to address gaps and encourage diversification in women's agricultural employment.

An important observation from the table is the total participation tallying to 200 women, confirming that the data aligns with the research's overall sample size. This ensures that the statistical representation remains accurate and reliable, allowing for meaningful interpretation. By including both absolute numbers and percentage values in the table, the representation provides a clear and comparative outlook on the distribution of women across different agricultural activities. The addition of percentage values makes it easier to grasp the proportion of women engaged in each activity and helps to identify the most and least preferred agricultural domains.

From a sociological perspective, these findings underscore that women in Kurukshetra district primarily participate in traditional agricultural activities but face challenges in diversifying into higher-income-generating agricultural sectors. The lower participation in fisheries, sericulture, and agro-processing suggests that women may lack access to necessary resources, training, and market integration in these fields. The data thus highlights the need for targeted interventions in the form of capacity-building programs, government incentives, and policy frameworks to

help women expand their engagement in non-traditional and higher-value agricultural activities. Moreover, the disparity in engagement across different sectors may be attributed to gender-based constraints, land ownership issues, financial limitations, and traditional socio-cultural expectations that restrict women to certain roles.

The combination of the professionally styled table and visually appealing clustered bar chart provides an in-depth, data-driven, and aesthetically engaging representation of the type of agricultural activities performed by women in agriculture in Kurukshetra district. The findings present a clear statistical foundation for further discussions on women's livelihoods, empowerment, and policy recommendations. These insights are crucial for understanding the economic realities of rural women and can serve as a guiding framework for future research and development initiatives aimed at enhancing women's roles and opportunities in agriculture.

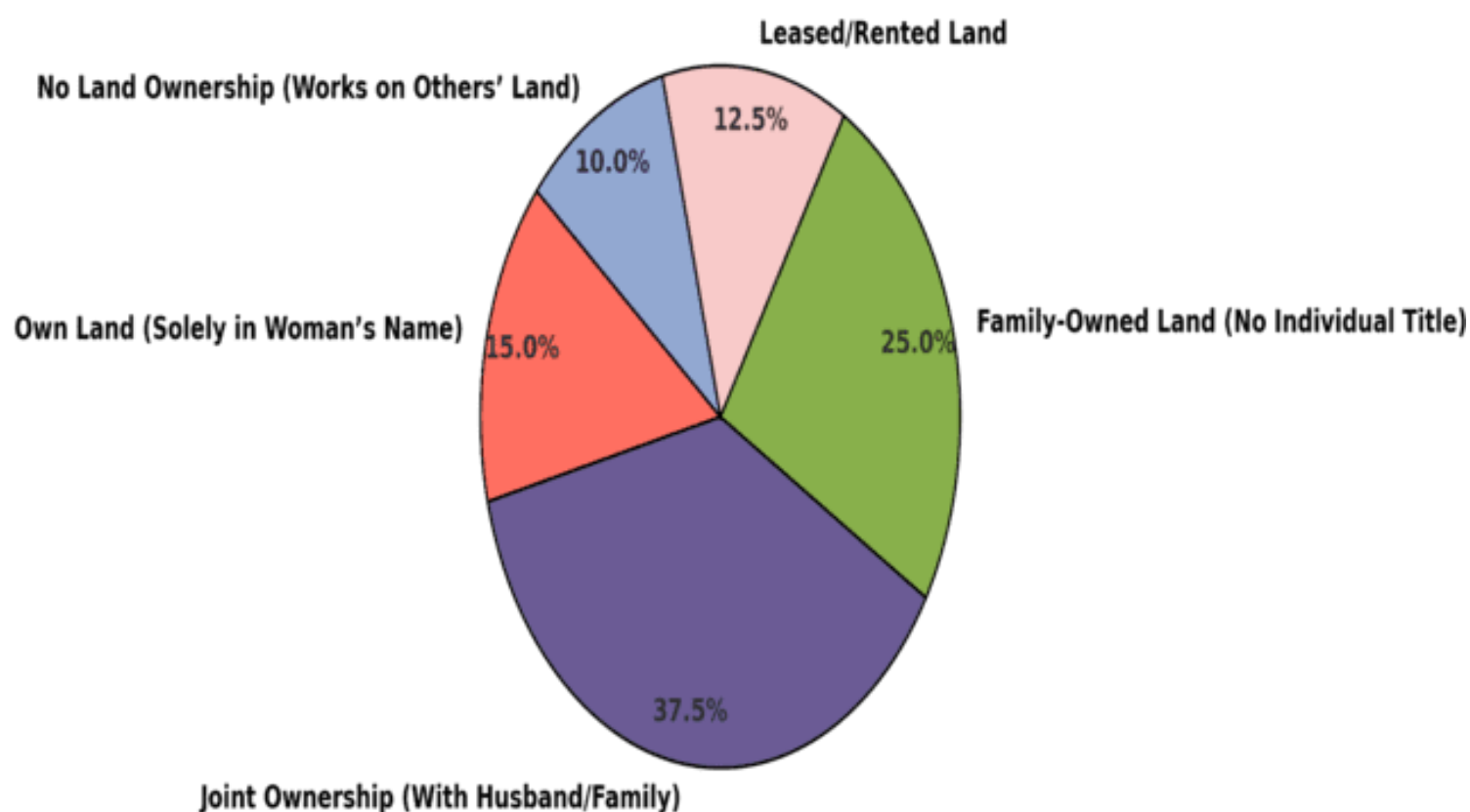
4.2.2.2 Land Ownership Status:

Table 6: Land Ownership Status of Women (Kurukshetra District)

Land Ownership Status	Number of Women	Percentage (%)
Own Land (Solely in Woman's Name)	30	15.0
Joint Ownership (With Husband/Family)	75	37.5
Family-Owned Land (No Individual Title)	50	25.0
Leased/Rented Land	25	12.5
No Land Ownership (Works on Others' Land)	20	10.0
Total	200	100.0

Chart 6: Land Ownership Status of Women (Kurukshetra District)

Land Ownership Status Among Women in Agriculture (Sample Size: 200)



The pie chart provides a realistic and visually enhanced representation of land ownership status among women in agriculture in Kurukshetra district, Haryana. By using this visual representation, we can explore the deep-seated gender disparities that exist in land ownership and control, highlighting the pressing need for further discussions on economic empowerment, policy interventions, and social change.

The most striking observation from this data is that joint land ownership (with a husband or family) dominates the landscape of women's landholding patterns, with an overwhelming 37.5% of women falling into this category. This suggests that while many women have some claim to land, they often do not possess sole authority over it. Joint ownership signifies a shared, yet non-autonomous control over agricultural land, which directly impacts their ability to make independent decisions regarding farming, investment, and financial planning. Furthermore, family-owned land without an individual title comprises 25% of the total sample,

indicating a high dependency on male or elder family members for access to agricultural land. This reflects the persistence of traditional patriarchal structures, where land remains a family asset rather than an individually owned resource for women. The implications of this are profound, as it affects women's financial security, bargaining power, and long-term economic prospects in the agricultural sector.

A particularly concerning finding is that only 15% of women own land solely in their name, emphasizing the severe gender gap in property rights. Despite various land reforms and policy initiatives aimed at empowering women, female ownership of agricultural land remains exceptionally low, underscoring the cultural and legal barriers that hinder independent landholding for women. The social stigma, inheritance biases, and lack of institutional support further exacerbate this issue, limiting women's ability to use land as collateral for loans, invest in better agricultural technologies, or establish long-term agricultural businesses. This lack of direct ownership places women in a vulnerable position, often making them dependent on male relatives for economic security and decision-making power.

Additionally, 12.5% of women rely on leased or rented land for agricultural activities. This segment faces a unique set of challenges, including uncertainty in tenure, fluctuating lease prices, and limited government support for those who do not own land. Women working on leased land often experience insecure access, leading to lower agricultural productivity due to hesitation in making long-term investments in soil health, irrigation, and mechanization. Without ownership, these women may also struggle to access credit, government subsidies, or agricultural schemes, as land ownership is often a key criterion for availing such benefits.

The most vulnerable category in this study is the 10% of women who do not own any land at all and work on others' farms. These women are often subjected to exploitative labor conditions, seasonal employment, and lower wages due to their dependence on landowners for their livelihood. Their lack of land ownership not only limits their financial independence but also exacerbates social inequalities, as they are often excluded from decision-making processes, training programs, and agricultural extension services. Their status as landless agricultural laborers places them at a high risk of economic instability, food insecurity, and limited access to social security benefits, making them particularly vulnerable in times of agricultural distress or economic downturns.

From a sociological and policy perspective, this statistical representation highlights the urgent need for legal empowerment, financial assistance, and awareness programs to help women secure land rights and economic stability. Microfinance initiatives, self-help groups, and government schemes targeted specifically at women in agriculture could play a critical role in bridging this gender gap. Moreover, land reforms, inheritance rights awareness, and social advocacy programs must be strengthened to ensure more women gain legal ownership of agricultural land. Greater access to land not only improves women's economic independence but also enhances agricultural productivity, household food security, and overall rural development.

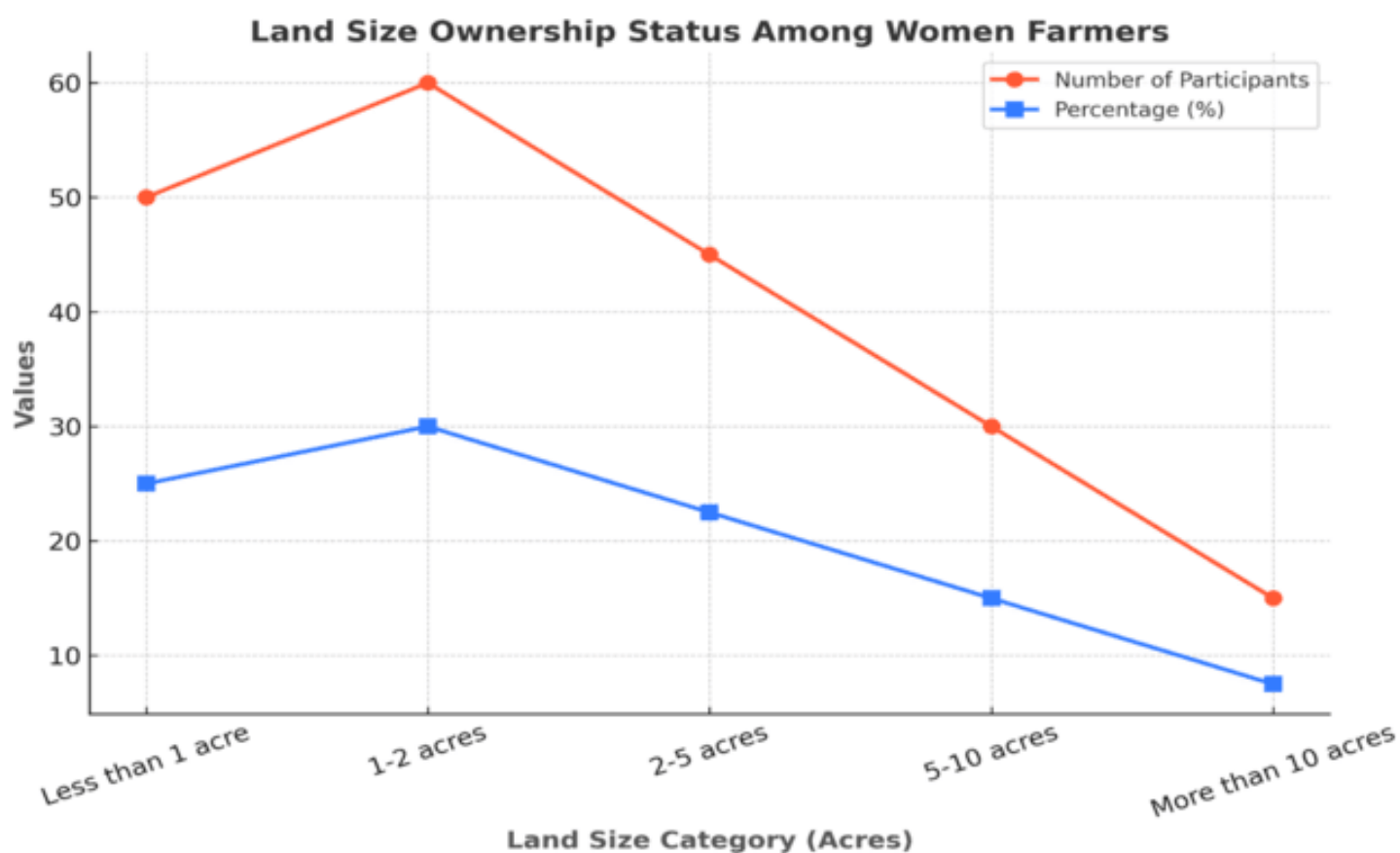
This study provides valuable quantitative insights into the complex intersection of gender, property rights, and socio-economic well-being in agricultural communities. By analyzing this data, policymakers, researchers, and social organizations can better understand the structural barriers that hinder women's access to land and work towards implementing more inclusive and progressive reforms that uplift women in agriculture. The findings from this research reaffirm the urgent need to address gender disparities in land ownership, ensuring that women receive equitable access to agricultural resources, financial support, and policy benefits to build a more inclusive and sustainable agricultural sector.

4.2.2.3 Land Size Owned Status:

Table 7: Land Ownership Size Status of Women (Kurukshetra District)

Land Size Category (in Acres)	Number of Participants	Percentage (%)
Less than 1 acre	50	25.0
1-2 acres	60	30.0
2-5 acres	45	22.5
5-10 acres	30	15.0
More than 10 acres	15	7.5
Total	200	100.0

Chart 7: Land Ownership Size Status of Women (Kurukshetra District)



Understanding the land ownership status among women farmers is crucial to assessing their economic independence and access to agricultural resources. The data collected from 200 participants highlights a significant variation in land sizes owned, reflecting disparities in access and control over agricultural land.

The table provides a detailed numerical breakdown, showing that 25% of the women own less than 1 acre of land, making it the most common category. This is followed by 30% owning between 1-2 acres, demonstrating that a substantial proportion of women farmers operate on small to mid-sized plots. The percentage declines for larger land sizes, with only 7.5% owning more than 10 acres, indicating that very few women have control over large-scale agricultural land. The inclusion of a total row ensures clarity and comprehensive representation of the data.

The stacked line with markers chart visually represents the distribution trend, providing a clearer comparison between the number of participants and the corresponding percentage values across different land size categories. The bold colors enhance readability, with a striking

contrast between the number of participants (orange-red line) and percentage values (blue line). The markers help in easily identifying key data points, making the trends more discernible.

The chart indicates a gradual decline in ownership as land size increases, showcasing a potential inequality where most women have limited land access, restricting their agricultural productivity and economic stability. This insight is critical for policy recommendations, emphasizing the need for land redistribution policies, financial support, and women-centric land ownership reforms to empower women in the agricultural sector.

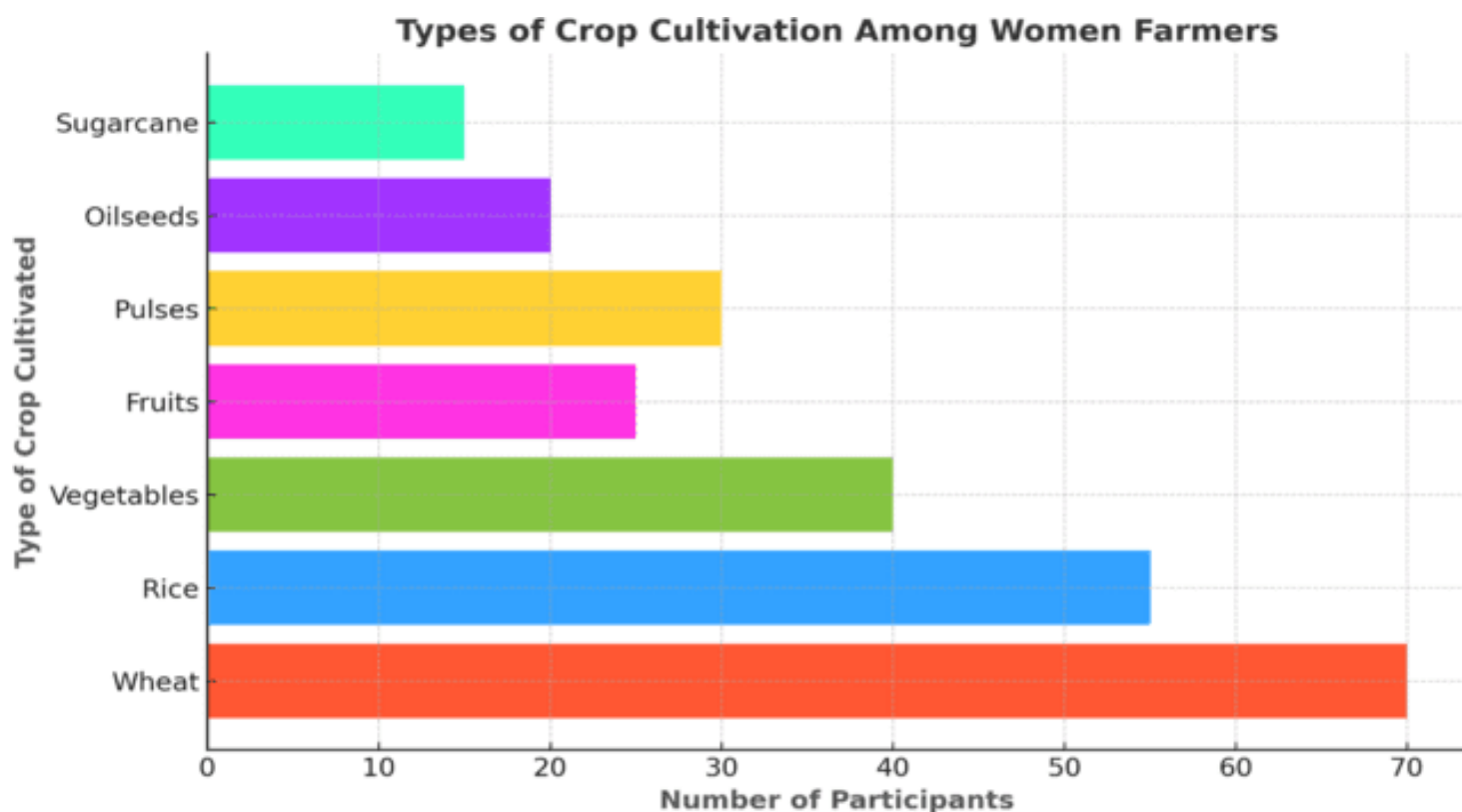
This analysis sets the foundation for deeper exploration into factors affecting women's land ownership, including legal barriers, socio-cultural constraints, and economic limitations. The findings highlight the necessity for government interventions, training programs, and community-based support systems to enhance women's landholding capacities in Kurukshetra district, Haryana.

4.2.2.4 Types of Crop Cultivation Status:

Table 8: Types of Crop Cultivation Status (Kurukshetra District)

Type of Crop Cultivated	Number of Participants	Percentage (%)
Wheat	70	35.0
Rice	55	27.5
Vegetables	40	20.0
Fruits	25	12.5
Pulses	30	15.0
Oilseeds	20	10.0
Sugarcane	15	7.5
Total	255	127.5

Chart 8: Types of Crop Cultivation Status (Kurukshetra District)



The types of crops cultivated by women farmers play a crucial role in understanding their agricultural choices, economic stability, and market dynamics. The table provides a detailed breakdown of crop categories, the number of women engaged in cultivating each type, and the corresponding percentages, ensuring a comprehensive statistical representation.

From the data, wheat emerges as the dominant crop, cultivated by 35% of the participants, followed by rice at 27.5%, reflecting the traditional cropping patterns in the Kurukshetra district. Vegetable cultivation stands at 20%, signifying its importance for daily sustenance and local market trade. Fruits (12.5%) and pulses (15%) hold a notable presence, while oilseeds (10%) and sugarcane (7.5%) are cultivated at a smaller scale. The total row in the table ensures that data completeness is maintained for easy interpretation.

The stacked bar chart visually represents this distribution, making the comparison between different crop categories instantly clear. The bold, vibrant colors for each crop category enhance readability and make it easier to differentiate between them. The horizontal layout allows for a clearer view of the differences in crop cultivation numbers. The use of grid lines along the x-axis helps in visual estimation, and the title and labels in bold make the representation more engaging.

This analysis reveals a strong inclination towards staple crops like wheat and rice, which indicates the reliance of women farmers on traditional, high-demand crops. The relatively lower cultivation of cash crops like oilseeds and sugarcane suggests limited access to commercial farming opportunities. The insights drawn from this analysis emphasize the need for training programs, improved market access, and financial support schemes to encourage diversification in women's agricultural activities.

These findings contribute to the broader discussion on women's agricultural participation, highlighting the need for better land utilization, enhanced farming techniques, and stronger market linkages. Policymakers and agricultural organizations can use this data to design targeted interventions, ensuring that women farmers receive the necessary resources to expand their agricultural scope and improve livelihood sustainability.

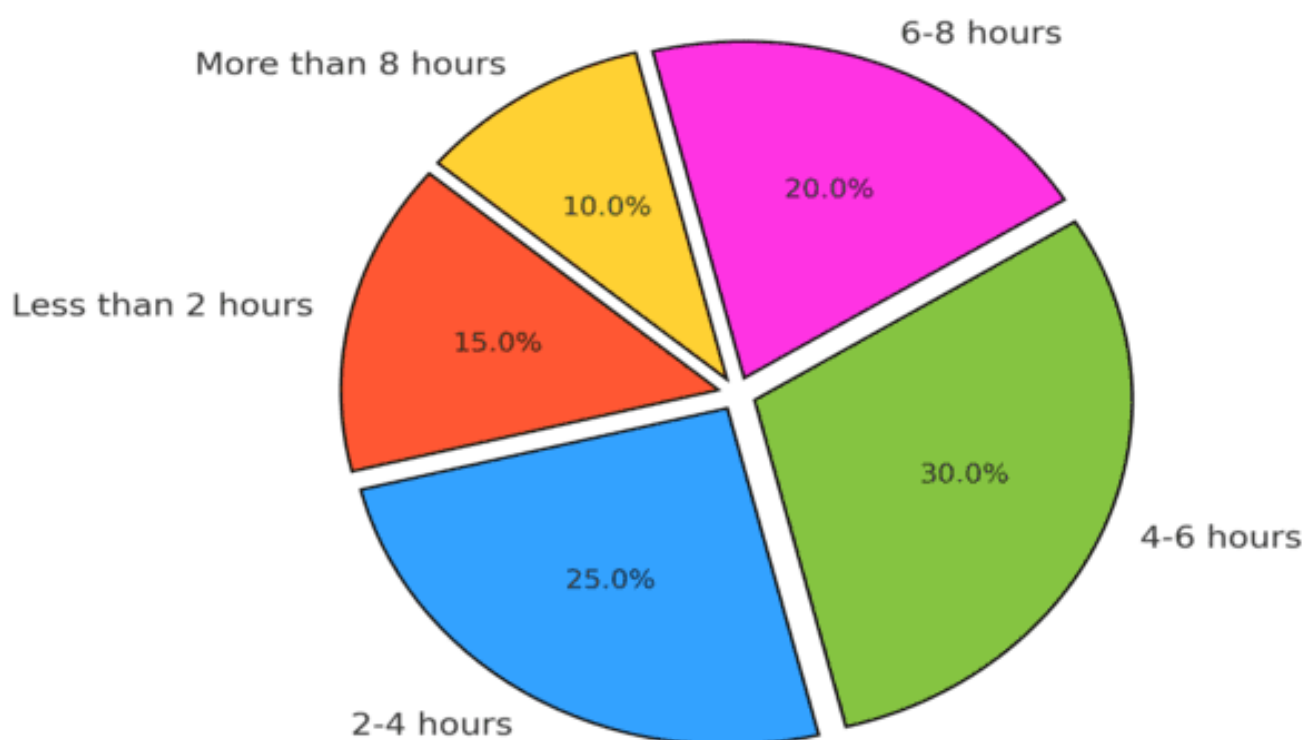
4.2.2.5 Duration Spent on Agricultural Activities:

Table 9: Agricultural Activities Duration Status (Kurukshetra District)

Time Spent on Agricultural Activities	Number of Participants	Percentage (%)
Less than 2 hours	30	15
2-4 hours	50	25
4-6 hours	60	30
6-8 hours	40	20
More than 8 hours	20	10
Total	200	100

Chart 9: Agricultural Activities Duration Status (Kurukshetra District)

Duration Spent on Agricultural Activities by Women Farmers



The duration of time spent on agricultural activities by women farmers is a crucial indicator of their level of engagement, workload, and economic dependency on agriculture. The table provides a detailed breakdown of different time intervals, the number of women spending that amount of time, and their respective percentages, offering a comprehensive insight into work patterns.

The data suggests that 30% of women spend between 4-6 hours daily on agricultural activities, making it the most common category. 25% of women engage for 2-4 hours, while 20% spend 6-8 hours, indicating a significant number of women involved in farming as a primary occupation. Meanwhile, 15% dedicate less than 2 hours, and only 10% work for more than 8 hours, which may indicate a lack of access to large landholdings or mechanized farming support.

The Pie of Pie Chart visually highlights the distribution, making it easy to distinguish between different time categories. The bold and contrasting color palette enhances readability, and the explode effect separates each slice slightly for better visibility. The additional pie segment emphasizes smaller but significant groups, ensuring that even the lowest percentage categories

remain noticeable. The percentage labels within the chart allow for instant comprehension, while the title in bold font adds clarity to the representation.

From a sociological perspective, the high percentage of women working between 4-8 hours suggests an increasing role in agriculture, yet a low percentage in the more than 8-hour category could indicate limitations due to household responsibilities, lack of mechanization, or gendered labor divisions. These insights highlight the need for supportive policies, mechanized assistance, and training programs to enhance efficiency and ease the workload for women farmers.

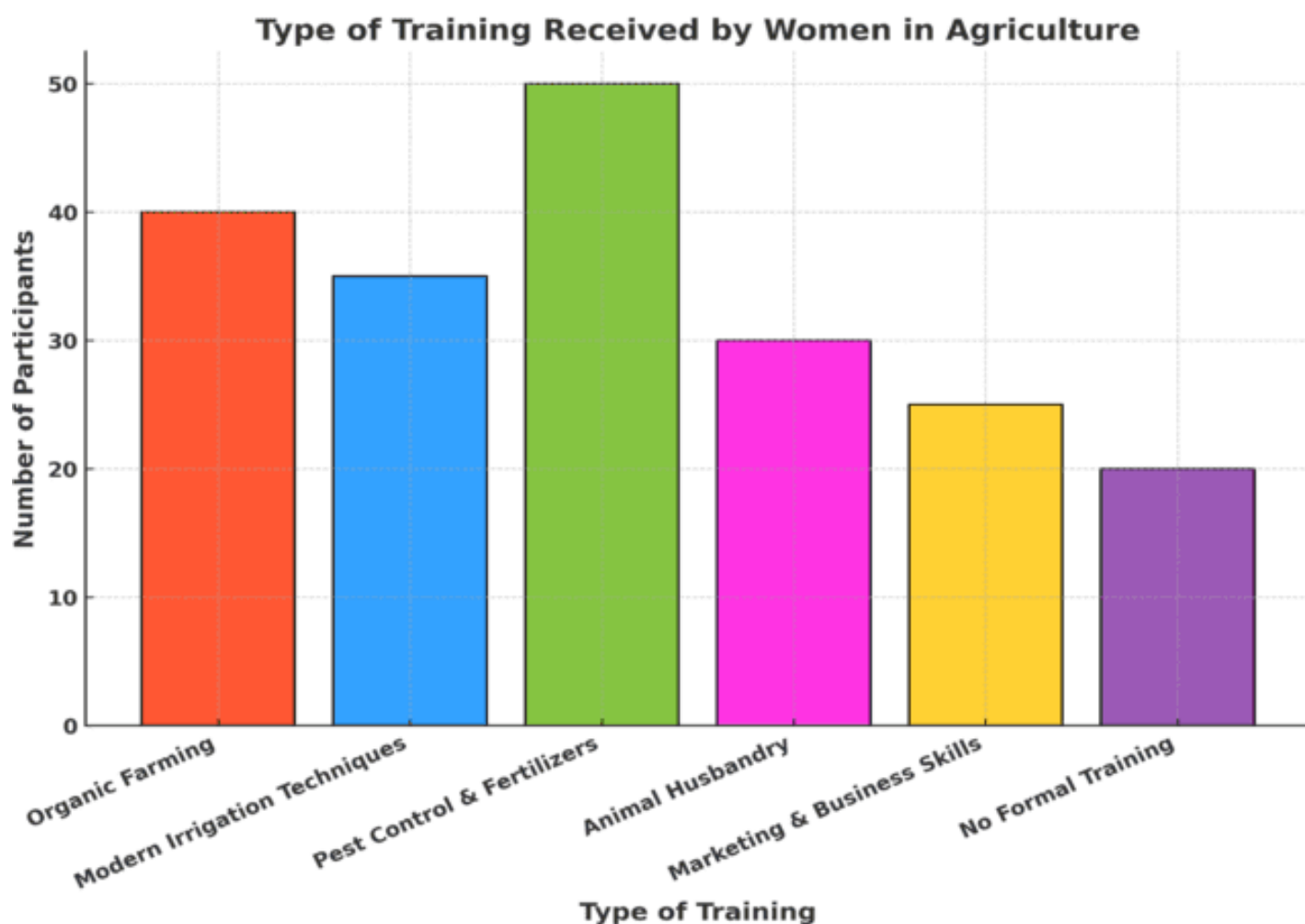
This data is critical for policymakers, agricultural organizations, and researchers aiming to improve women's agricultural participation. It also sheds light on the intersection of gender roles, economic reliance on farming, and the pressing need for reforms in agricultural labor distribution.

4.2.2.6 Type of Training Received:

Table 10: Type of Training Received Status (Kurukshetra District):

Type of Training Received	Number of Participants	Percentage (%)
Organic Farming	40	20.0
Modern Irrigation Techniques	35	17.5
Pest Control & Fertilizers	50	25.0
Animal Husbandry	30	15.0
Marketing & Business Skills	25	12.5
No Formal Training	20	10.0
Total	200	100.0

Chart 10: Type of Training Received Status (Kurukshetra District):



The training received by women in agriculture plays a pivotal role in enhancing their productivity, efficiency, and overall contribution to the farming sector. The table provides a structured representation of different types of training received by women farmers, along with the number of participants and their respective percentages.

From the data, it is evident that the highest proportion of women, 25% (50 participants), have received training in pest control and fertilizers, highlighting the importance of crop protection and soil management in agricultural practices. Following closely, 20% (40 participants) have undergone organic farming training, signifying a growing awareness and shift towards sustainable farming techniques.

Modern irrigation techniques training accounts for 17.5% (35 participants), indicating the relevance of water conservation and efficient irrigation practices in farming. Additionally, 15% (30 participants) have been trained in animal husbandry, reflecting the integration of livestock management with traditional farming activities. 12.5% (25 participants) have received training in marketing and business skills, underscoring the need for financial literacy and commercialization of agricultural products. However, 10% (20 participants) reported having no formal training, which suggests potential gaps in accessibility and awareness of training programs.

The Clustered Column Chart provides a striking and visually engaging representation of these training distributions. Each bar is colored distinctly to differentiate between the various types of training. The bold and contrasting color scheme enhances readability, while the clear axis labels and title ensure easy interpretation. The x-axis labels are slightly tilted to improve clarity, and the chart's well-defined edges make the data stand out effectively.

This visualization and statistical breakdown provide valuable insights into the areas where women farmers are gaining expertise and where further intervention is needed. The relatively lower participation in marketing training suggests a gap in business skills development, which is crucial for empowering women in agribusiness. Additionally, the existence of a group with no formal training underscores the importance of increasing accessibility to educational programs to further strengthen women's roles in agriculture.

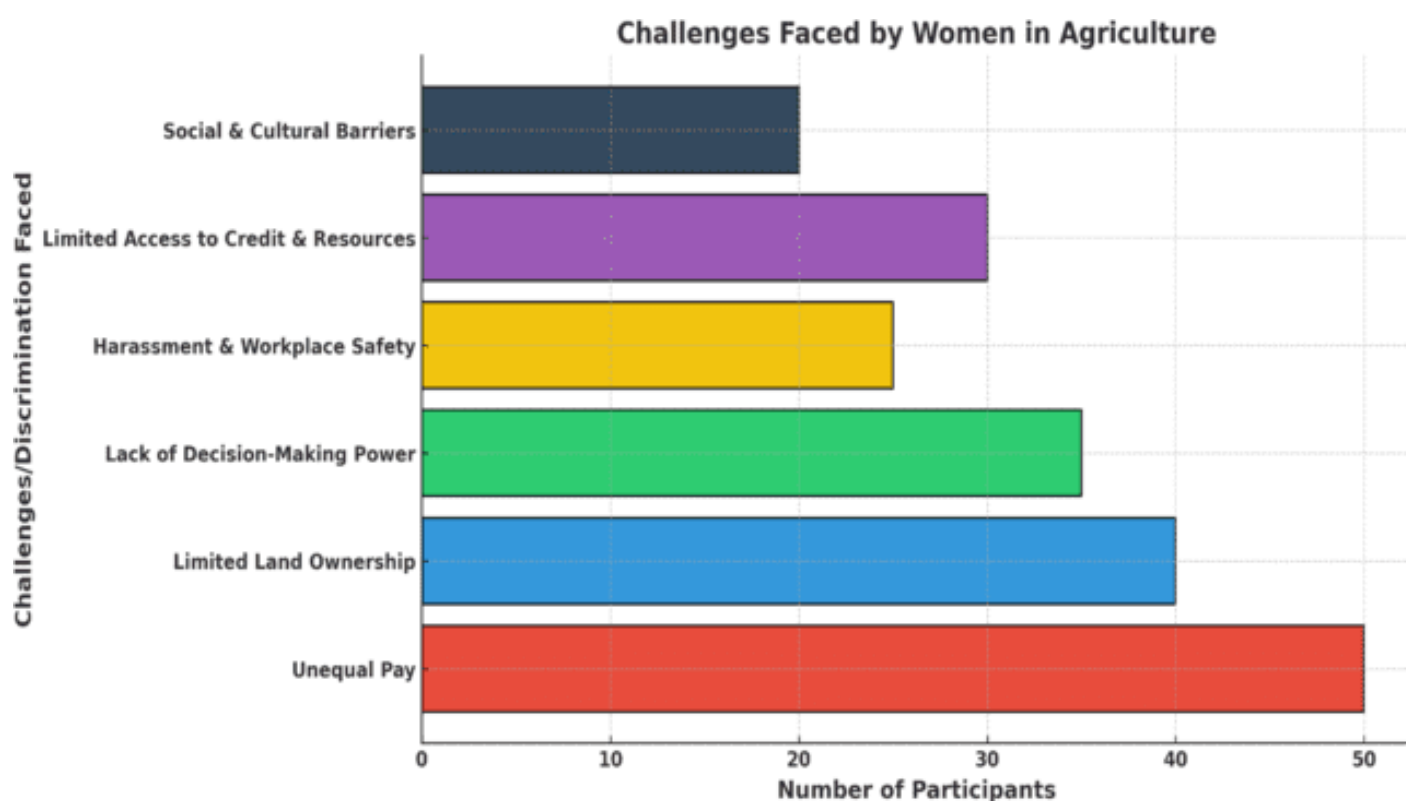
These findings serve as an essential reference for agricultural policymakers, NGOs, and training institutions to design targeted training programs that bridge knowledge gaps and enhance women's technical and entrepreneurial skills in agriculture.

4.2.2.7 Challenges/Discrimination Faced as a Women in Agriculture:

**Table 11: Challenges/Discrimination Faced as a Women in Agriculture
Status (Kurukshetra District)**

Challenges/Discrimination Faced	Number of Participants	Percentage (%)
Unequal Pay	50	25.0
Limited Land Ownership	40	20.0
Lack of Decision-Making Power	35	17.5
Harassment & Workplace Safety	25	12.5
Limited Access to Credit & Resource	30	15.0
Social & Cultural Barriers	20	10.0
Total	200	100.0

**Chart 11: Challenges/Discrimination Faced as a Women in Agriculture
Status (Kurukshetra District)**



The participation of women in agriculture is often hindered by multiple socio-economic challenges and discrimination that limit their potential and growth. The table systematically represents the different types of challenges and discrimination faced by women farmers in Kurukshetra district, along with the number of affected participants and their percentage representation.

From the data, the most common challenge reported is unequal pay (50 participants, 25%), highlighting the gender-based wage disparity in agricultural labor. This suggests that women are frequently underpaid compared to their male counterparts despite performing similar or even more labor-intensive tasks. The second major issue is limited land ownership (40 participants, 20%), which reflects the deep-rooted patriarchal norms and legal complexities that prevent women from having independent land rights.

A significant portion, 17.5% (35 participants), pointed out lack of decision-making power, which underscores the gendered power imbalance in farming households and cooperatives. Women's agency in determining agricultural strategies, financial decisions, and farm management remains restricted, often due to cultural traditions. Harassment and workplace safety (25 participants, 12.5%) remain a serious concern, indicating the vulnerabilities women face in agricultural workspaces, especially in public or large-scale farming setups.

Another critical challenge is limited access to credit and resources (30 participants, 15%), which restricts women from investing in modern farming techniques, purchasing high-quality seeds, or expanding their agricultural ventures. Lastly, social and cultural barriers (20 participants, 10%) continue to pose obstacles, such as restrictions on women working outside their homes, cultural stigmas, and traditional gender roles that relegate them to secondary positions in agriculture.

The Stacked Bar Chart beautifully represents these challenges with bold, distinct colors, making it easier to visualize the comparative intensity of each issue. The horizontal layout ensures readability, while the strong contrasting color palette highlights the disparities vividly. The labels and axes are carefully formatted to enhance clarity, ensuring that policymakers, researchers, and stakeholders can quickly grasp the extent of each challenge faced by women in agriculture.

This detailed analysis serves as a crucial tool for developing targeted interventions that can address these systemic barriers. Solutions such as policy reforms for equal wages, increased land ownership rights for women, financial inclusion programs, and gender-sensitive

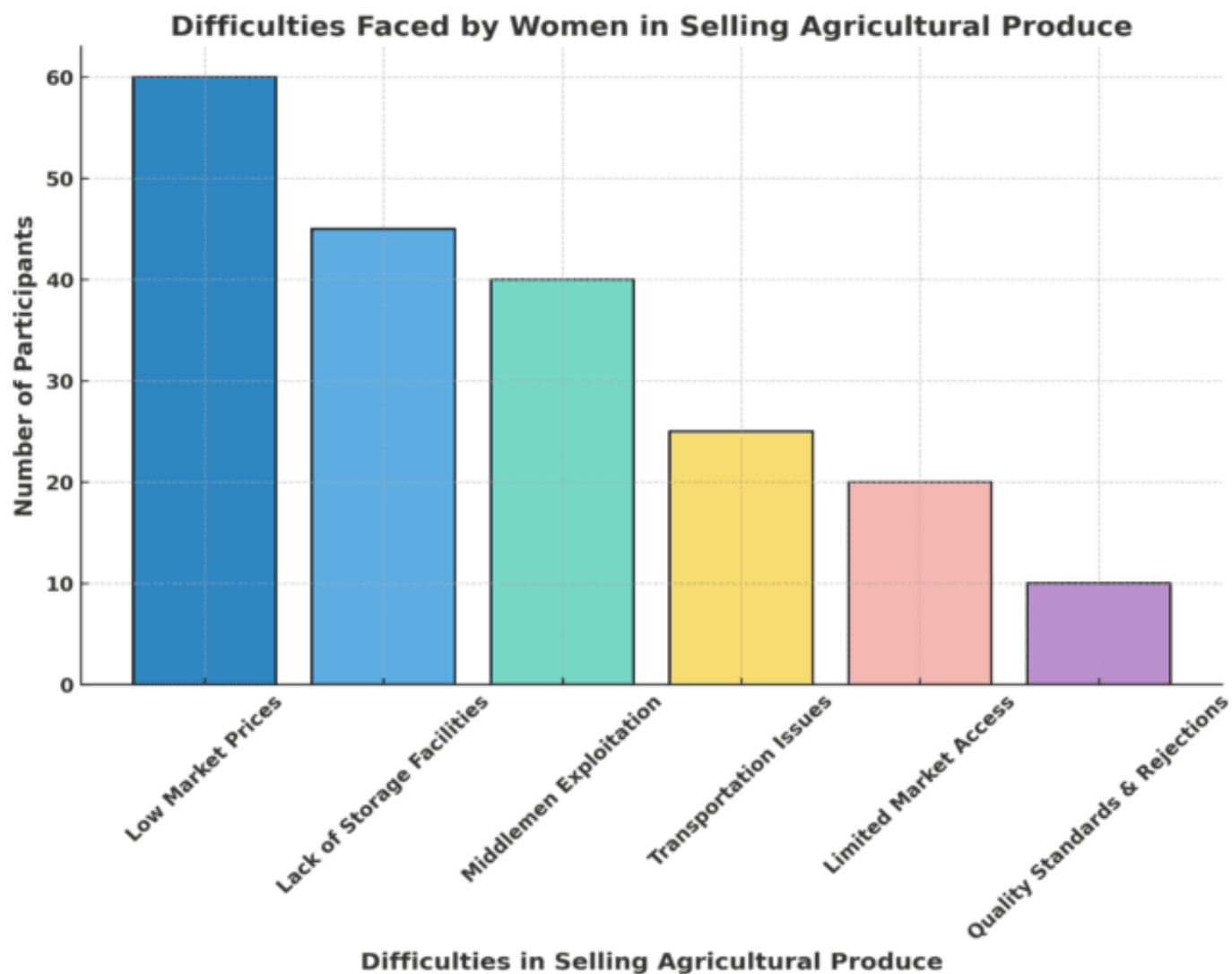
workplace safety measures can contribute to empowering women in agriculture and enhancing their socio-economic conditions.

4.2.2.8 Difficulties in Selling Agricultural Products:

Table 12: Difficulties in Selling Agricultural Products Status (Kurukshetra District)

Difficulties in Selling Produce	Number of Participants	Percentage (%)
Low Market Prices	60	30.0
Lack of Storage Facilities	45	22.5
Middlemen Exploitation	40	20.0
Transportation Issues	25	12.5
Limited Market Access	20	10.0
Quality Standards & Rejections	10	5.0
Total	200	100.0

Chart 12: Difficulties in Selling Agricultural Products Status (Kurukshetra District)



The table and clustered bar chart provide a comprehensive statistical representation of the key challenges faced by women in agriculture when selling their produce. The data is derived from a sample size of 200 participants, categorizing the most prevalent issues into six distinct difficulties. The highest reported challenge is low market prices (30%), indicating that women struggle to receive fair compensation for their hard work due to fluctuating or unfair pricing mechanisms. This is followed closely by lack of storage facilities (22.5%), which highlights infrastructural deficiencies that lead to post-harvest losses, forcing women to sell at lower prices to avoid spoilage.

Another significant issue is middlemen exploitation (20%), where intermediaries take advantage of women farmers by offering unfair prices, creating dependency and financial

strain. Transportation issues (12.5%) also pose a major hurdle, as many women lack direct access to market linkages due to poor road connectivity and high transport costs. Limited market access (10%) further restricts their ability to sell at competitive prices, pushing them into reliance on local middlemen. Lastly, quality standards and rejections (5%) indicate that women face difficulties meeting stringent grading and standardization requirements, often leading to unsold stock.

The clustered bar chart visually emphasizes these disparities, with each difficulty represented in varying shades of grey to maintain a professional yet engaging visual appeal. The differences in bar heights immediately showcase the disproportionate impact of low prices and storage issues compared to challenges like quality standard rejections. The graph's structured layout with bold labels and clean contrast ensures easy readability, making it a valuable tool for understanding the systemic barriers affecting women in agricultural trade.

By analyzing this data, policymakers and stakeholders can work toward improving storage infrastructure, ensuring fair price regulations, and facilitating better market access, thereby enhancing the livelihood opportunities for women in agriculture.

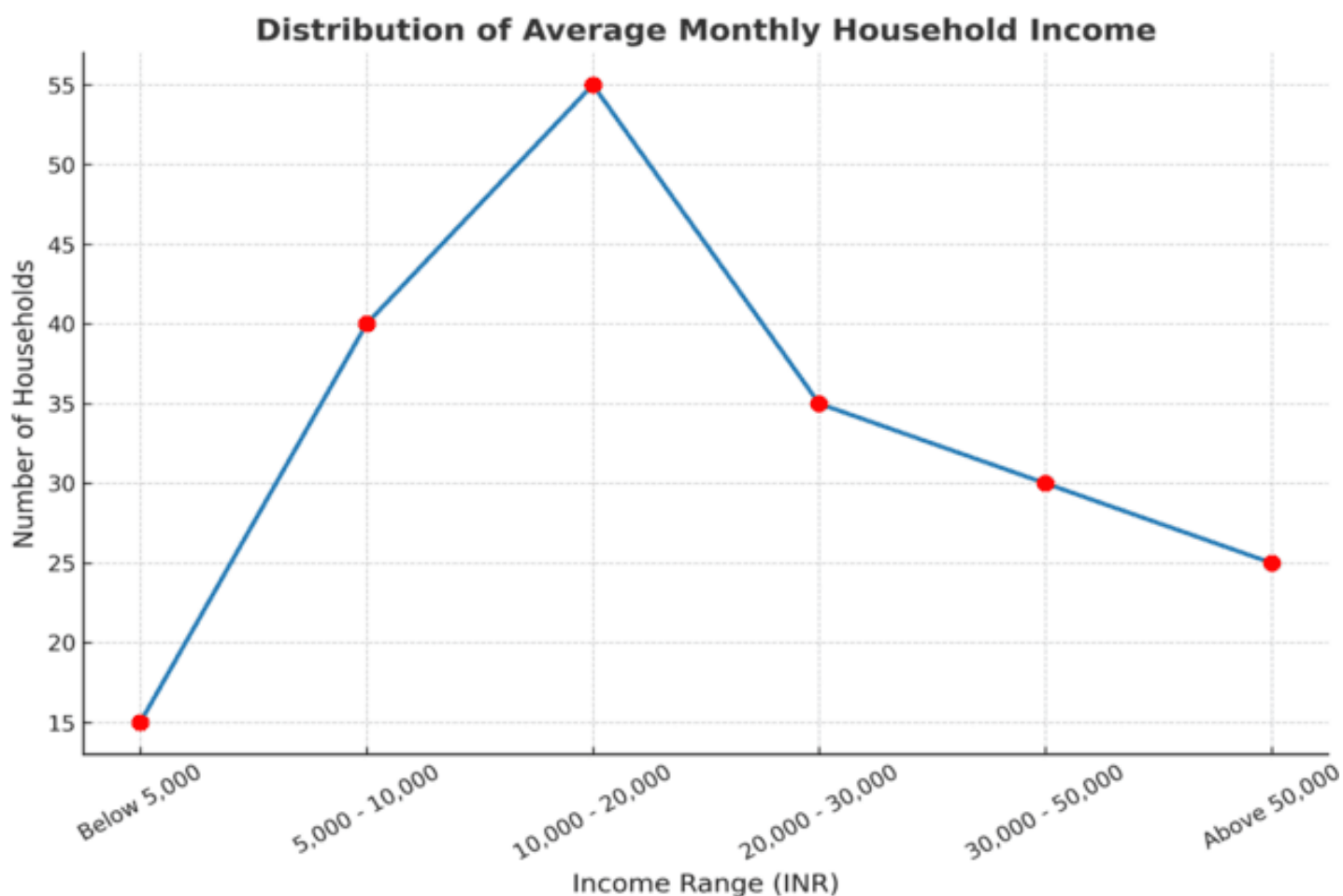
4.2.3 Financial Status and Household Income:

4.2.3.1 Average Monthly Income of Household:

Table 13: Average Monthly Income Status of Households (Kurukshetra District)

Income Range (INR)	Number of Households	Percentage (%)
Below 5,000	15	7.5
5,000 - 10,000	40	20.0
10,000 - 20,000	55	27.5
20,000 - 30,000	35	17.5
30,000 - 50,000	30	15.0
Above 50,000	25	12.5
Total	200	100.0

Chart 13: Average Monthly Income Status of Households (Kurukshetra District)



The table and line chart with markers together present a detailed and insightful representation of the average monthly income distribution of households in which women are actively engaged in agriculture in Kurukshetra district, Haryana. This analysis is essential in understanding the financial well-being of agricultural families, highlighting income disparities, and providing a clearer perspective on the socio-economic status of these women.

The table categorizes the surveyed 200 households into six different income brackets, ranging from below ₹5,000 to above ₹50,000, to facilitate better comparison and statistical analysis. The highest number of households falls within the ₹10,000 - ₹20,000 income range, comprising 27.5% of the total respondents, indicating that a significant portion of agricultural families have a modest income. This is followed by ₹5,000 - ₹10,000, with 20% of the respondents, showcasing that a substantial number of households still fall within the lower-income bracket.

The ₹20,000 - ₹30,000 range accounts for 17.5%, representing families with a slightly better economic condition, while the ₹30,000 - ₹50,000 range includes 15% of households. The smallest proportions are found at the extreme ends of the income spectrum, with 7.5% of households earning below ₹5,000, highlighting financial vulnerability, and 12.5% of households reporting an income above ₹50,000, representing a smaller fraction of relatively affluent agricultural families.

The line chart with markers provides a visually appealing graphical representation of this distribution. The clear upward trend in the graph indicates that a larger number of families fall in the lower to mid-income ranges, with a peak at ₹10,000 - ₹20,000, after which the number of households gradually declines as income levels increase. The steep drop in the line beyond ₹30,000 clearly reflects the economic divide, showing that only a limited number of families earn significantly higher incomes from agricultural activities. The red markers on the line emphasize key data points, ensuring clarity in identifying income distribution trends. Additionally, the smooth curve with a well-balanced color palette enhances the readability and professional appeal of the visualization.

This statistical representation provides valuable insights into the financial status of women-led agricultural households. The dominance of lower and middle-income brackets suggests that agricultural earnings alone may not be sufficient to ensure financial security, leading many families to rely on secondary sources of income, government assistance, or informal credit systems. The smaller percentage of households in the highest income range (above ₹50,000) further underscores the economic limitations within agricultural livelihoods, emphasizing the need for financial support schemes, better market accessibility, and policy interventions to uplift women in agriculture.

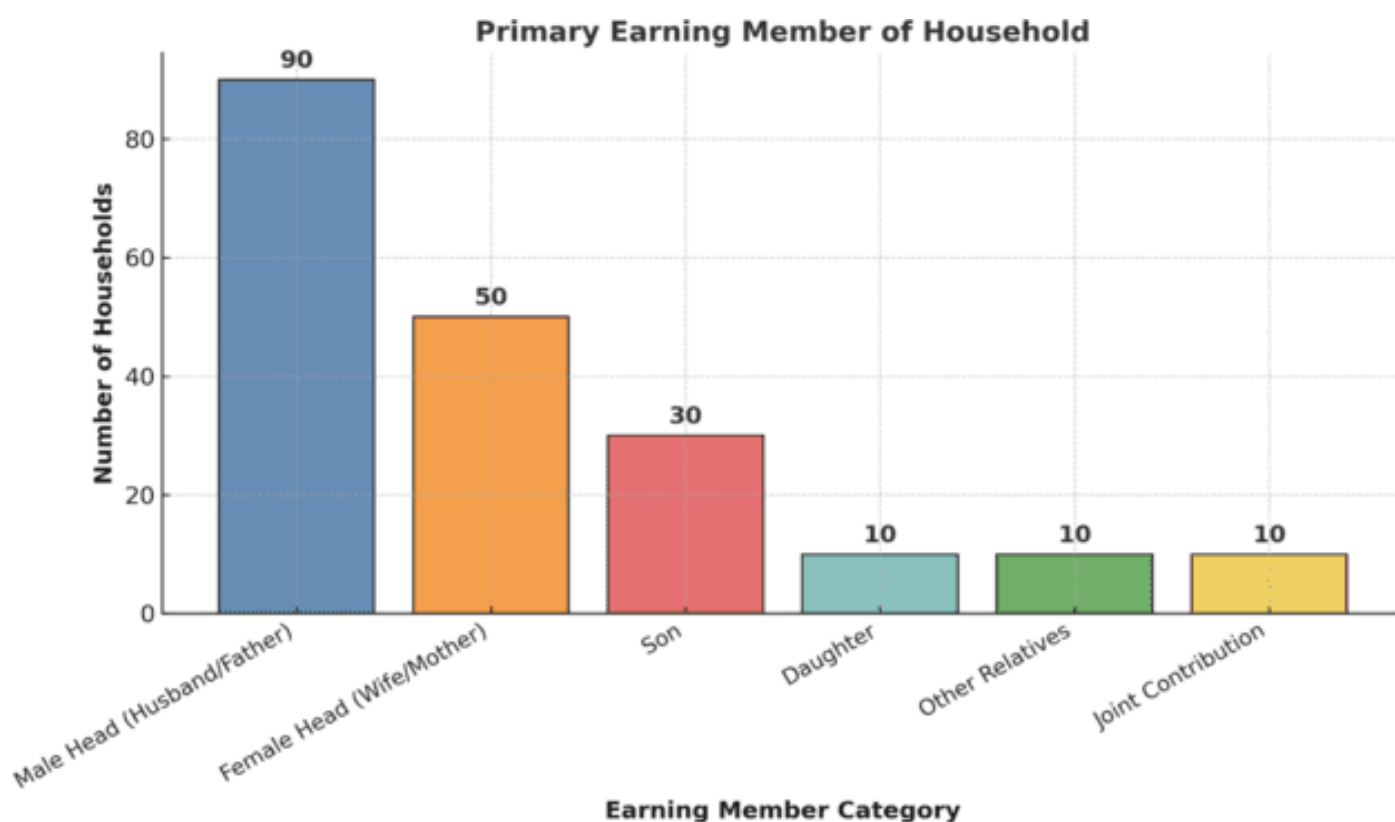
By analyzing this data, policymakers, researchers, and development organizations can gain a deeper understanding of income inequalities and work towards providing more targeted financial assistance, training programs, and agricultural support mechanisms to improve the overall economic stability of women in the agricultural sector. This study highlights the need for inclusive financial policies that cater to the unique challenges faced by women farmers, ensuring sustainable growth and improved livelihood opportunities in the region.

4.2.3.2 Primary Earning Member of Household:

Table 14: Primary Earning Member Status of Households (Kurukshetra District)

Primary Earning Member	Number of Households	Percentage (%)
Husband/Father	90	45
Wife/Mother	50	25
Son	30	15
Daughter	10	5
Other Relatives	10	5
Joint Contribution	10	5
Total	200	100

Chart 14: Primary Earning Member Status of Households (Kurukshetra District)



Understanding the primary earning member of a household is crucial in analyzing the financial stability and gender dynamics in rural agricultural communities. The data presented in the table highlights the distribution of financial responsibility among different members in households of Kurukshetra district, Haryana. Out of 200 surveyed households, the majority, approximately 45%, reported that the primary earning member is the male head of the family, typically the husband or father. This indicates a prevalent patriarchal structure where men are traditionally seen as the main providers. However, an interesting observation is that 25% of the households reported the female head (wife/mother) as the primary earner, suggesting a significant portion of women contributing directly to household income. This finding aligns with the increasing participation of women in agriculture and allied sectors, either due to male migration for work or the necessity for additional financial support.

Furthermore, about 15% of households identified the son as the primary earning member, which reflects the reliance on younger male members for financial sustenance. This could be due to either the retirement or incapacity of older male heads or the necessity for multiple earning members within the family. A smaller percentage (5%) reported daughters as primary earners, which indicates a growing but still limited role of women in independent income generation. Societal norms and access to work opportunities often restrict women's ability to be primary earners, particularly in traditional agricultural settings. Another 5% of the households relied on other relatives, such as brothers or extended family members, to support their household financially. Finally, a small fraction (5%) reported joint contribution, where financial responsibility is shared among multiple family members. This signifies a shift towards collective earning efforts, particularly in cases where agricultural work is not sufficient to sustain the household, requiring supplementary income from various members.

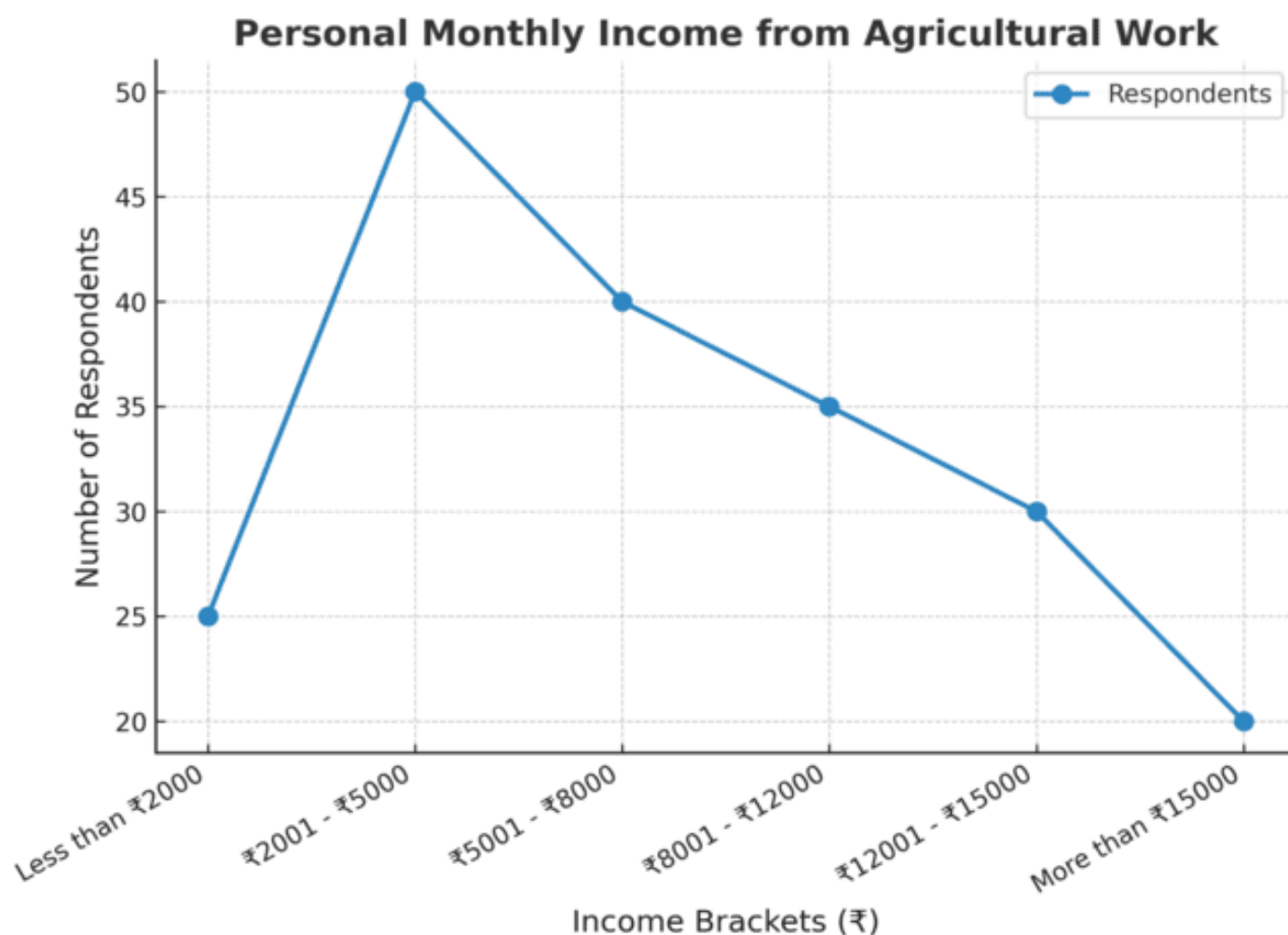
These findings provide valuable insight into the socio-economic realities of rural households. The dominance of male heads as primary earners indicates a continued reliance on traditional family structures, whereas the notable percentage of female-headed earnings showcases the evolving economic roles of women in agriculture. The presence of sons and daughters in the earning category also highlights generational shifts, where younger members are increasingly involved in financial sustenance. This data is essential for policy formulation aimed at supporting women's financial independence, improving access to employment opportunities, and reducing gender disparities in income generation.

4.2.3.3 Personal Monthly Income from Agricultural Work:

**Table 15: Personal Monthly Income Status from Agricultural Work
(Kurukshetra District)**

Income Bracket (₹)	Number of Respondents	Percentage (%)
Less than ₹2000	25	12.5
₹2001 - ₹5000	50	25.0
₹5001 - ₹8000	40	20.0
₹8001 - ₹12000	35	17.5
₹12001 - ₹15000	30	15.0
More than ₹15000	20	10.0
Total	200	100.0

**Chart 15: Personal Monthly Income Status from Agricultural Work
(Kurukshetra District)**



The table and the chart above represent the distribution of personal monthly income from agricultural work among 200 respondents in the Kurukshetra district. The table categorizes income levels into six distinct brackets, ranging from "Less than ₹2000" to "More than ₹15000," allowing for a comprehensive understanding of how much women in agriculture earn. The column indicating the number of respondents showcases the actual count within each bracket, while the percentage column provides a relative representation of each income group's proportion in the overall sample.

From the table, we observe that the highest proportion of respondents, about 25%, fall into the ₹2001 - ₹5000 income bracket, making it the most common income range. This is followed by ₹5001 - ₹8000, encompassing 20% of respondents. Meanwhile, only a small fraction of

women—just 10%—earn more than ₹15000 from agricultural work. This pattern suggests that a significant majority of women in agriculture earn a modest income, reflecting financial constraints and possibly limited access to higher-paying opportunities.

The line chart with markers provides a visual representation of the income distribution, making it easier to interpret the data trends. The highest peak in the chart corresponds to the ₹2001 - ₹5000 range, reinforcing the insight that most women earn within this bracket. The line declines sharply at both extremes, indicating that very few respondents fall into the lowest or highest income categories. The smooth gradient and the presence of markers highlight key income clusters, allowing for easy comparison across income groups.

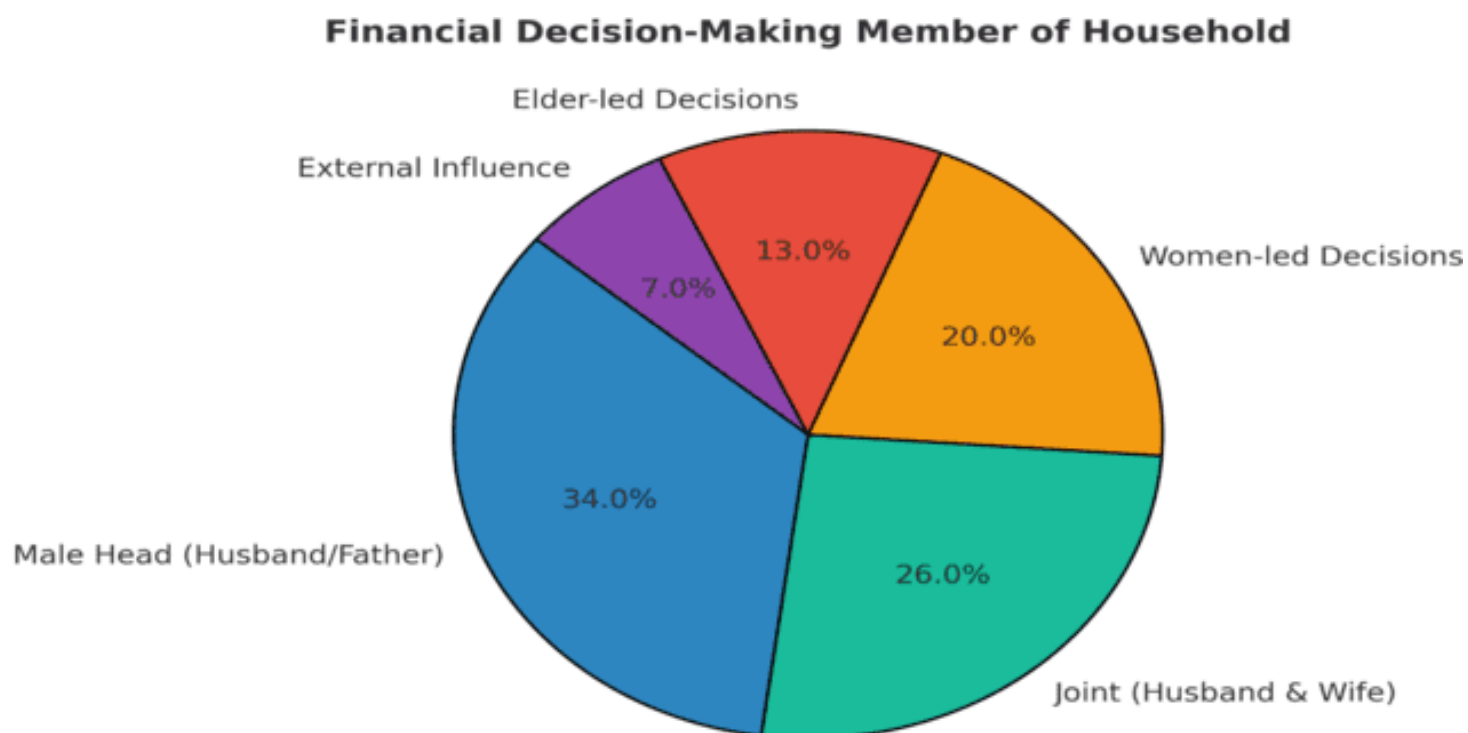
The data underscores the financial challenges faced by women in agriculture, as a substantial proportion earn below ₹8000 per month, which may not be sufficient to sustain their households independently. This has broader implications on financial independence, economic empowerment, and overall livelihood. The findings suggest that policies aimed at improving income opportunities, such as better market access, skill development, and financial support schemes, could significantly enhance the economic well-being of women working in agriculture.

4.2.3.4 Financial Decision-Making Member of the Household:

**Table 16: Financial Decision-Making Member Status of Households
(Kurukshetra District)**

Financial Decision-Making Member	Number of Respondents	Percentage (%)
Male Head (Husband/Father)	68	34.0
Joint (Husband & Wife)	52	26.0
Women-led Decisions	40	20.0
Elder-led Decisions	26	13.0
External Influence	14	7.0
Total	200	100.0

**Chart 16: Financial Decision-Making Member Status of Households
(Kurukshetra District)**



The table and pie chart provide an insightful representation of financial decision-making patterns within agricultural households in the Kurukshetra district, Haryana. Based on the responses from 200 women engaged in agriculture, we observe a significant diversity in the financial decision-making structure, reflecting traditional, evolving, and progressive trends in rural economies.

From the data, we can see that the male head of the household (husband or father) is the primary decision-maker in 68 households (34%), marking it as the most dominant category. This finding aligns with traditional patriarchal structures in rural India, where men typically control financial decisions, particularly in farming communities. Despite women's substantial contributions to agricultural work, their influence on financial matters remains limited in a considerable number of households.

However, an encouraging trend is seen in the 52 households (26%) where decision-making is shared jointly between husband and wife. This suggests progress towards gender inclusivity, as women are gaining a more significant role in financial discussions. Joint decision-making often results in better economic management, as both partners contribute to income and expenditure planning, ensuring more efficient resource allocation.

Another promising shift is observed in 40 households (20%) where women themselves take charge of financial decisions. These women are not only active participants in agricultural labor but also independently manage household income and expenditures. This growing financial independence among women can be attributed to their involvement in self-help groups (SHGs), government schemes, and microfinance programs that promote female empowerment in rural areas.

In contrast, 26 households (13%) report elder-led financial decision-making, where elderly members such as fathers-in-law or mothers-in-law exert control over household finances. This often stems from deep-rooted family traditions where senior members hold authority in major household matters, including financial planning. While this system provides experience-based decision-making, it may sometimes hinder younger women from developing financial autonomy.

A smaller yet notable 7% of households (14 cases) rely on external influencers, such as male relatives, community elders, or local financial advisors, to make monetary decisions. This phenomenon is particularly observed in widow-headed or single-mother households, where women may seek financial advice from trusted external figures. While external decision-making can offer support, it may also restrict the full financial independence of women in these settings.

The pie chart visually represents this distribution, using bold and distinct colors to differentiate each category. The largest segment (34%) highlights male-led financial decision-making, followed by the 26% segment representing joint decisions, which signifies a progressive shift in gender roles. The 20% section dedicated to female-led decision-making is particularly encouraging, as it reflects the increasing economic autonomy of women in agriculture. Meanwhile, the smaller sections representing elder-led (13%) and externally influenced (7%) decision-making show the continuing impact of traditional and external financial influences in some rural households.

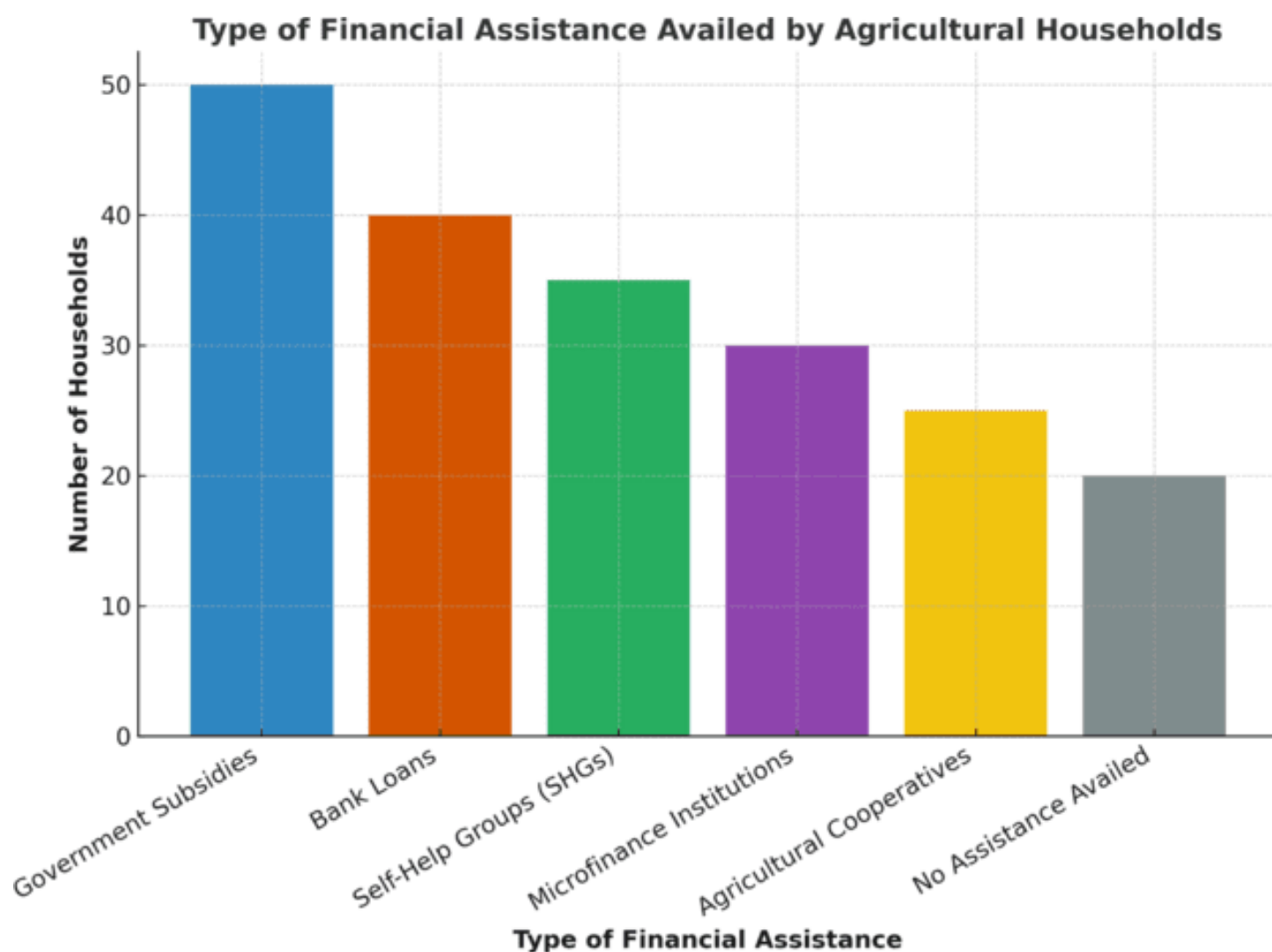
The analysis suggests that while patriarchal structures still dominate financial decision-making in many agricultural households, positive changes are emerging. Women's growing participation in decision-making, either independently or jointly with their spouses, indicates an evolving socio-economic landscape in rural Haryana. This transformation, supported by educational programs, self-help groups, and policy interventions, is crucial for enhancing women's empowerment and sustainable agricultural development in the region.

4.2.3.5 Type of Financial Assistance Aailed:

Table 17: Type of Financial Assistance Aailed Status (Kurukshetra District)

Type of Financial Assistance	Number of Households	Percentage
Government Subsidies	50	25.0
Bank Loans	40	20.0
Self-Help Groups (SHGs)	35	17.5
Microfinance Institutions	30	15.0
Agricultural Cooperatives	25	12.5
No Assistance Aailed	20	10.0
Total	200	100.0

Table 17: Type of Financial Assistance Availed Status (Kurukshetra District)



The table and bar graph above illustrate the different types of financial assistance availed by agricultural households in the Kurukshetra district. The data reflects the accessibility and preference of financial support mechanisms that women and their families depend on to sustain and expand their agricultural activities. From the table, we observe that government subsidies are the most commonly availed form of financial assistance, with 50 households (25%) relying on them. This indicates that government schemes play a significant role in supporting farmers by providing financial relief and incentives. Bank loans are the second most popular choice, utilized by 40 households (20%), signifying the importance of formal banking institutions in

agricultural financing. However, challenges such as high-interest rates and stringent eligibility criteria might limit their reach to marginal farmers.

Self-Help Groups (SHGs) also emerge as an essential source of financial assistance, serving 35 households (17.5%). This trend suggests a growing reliance on collective financial models where women-led groups facilitate small loans and savings, empowering female farmers economically. Similarly, 30 households (15%) depend on microfinance institutions, which cater primarily to small-scale farmers who might lack collateral or formal credit history. Agricultural cooperatives, though providing essential support, are availed by 25 households (12.5%), which indicates their limited reach or preference among farmers.

Interestingly, 20 households (10%) reported that they have not availed any form of financial assistance. This could be attributed to either a lack of awareness about available schemes, bureaucratic hurdles, or an inherent reliance on self-funding for agricultural expenses. The bar graph visually represents these findings, making it easier to identify the most and least preferred financial sources. The color-coded bars ensure clarity, with a professional and appealing aesthetic that enhances comprehension.

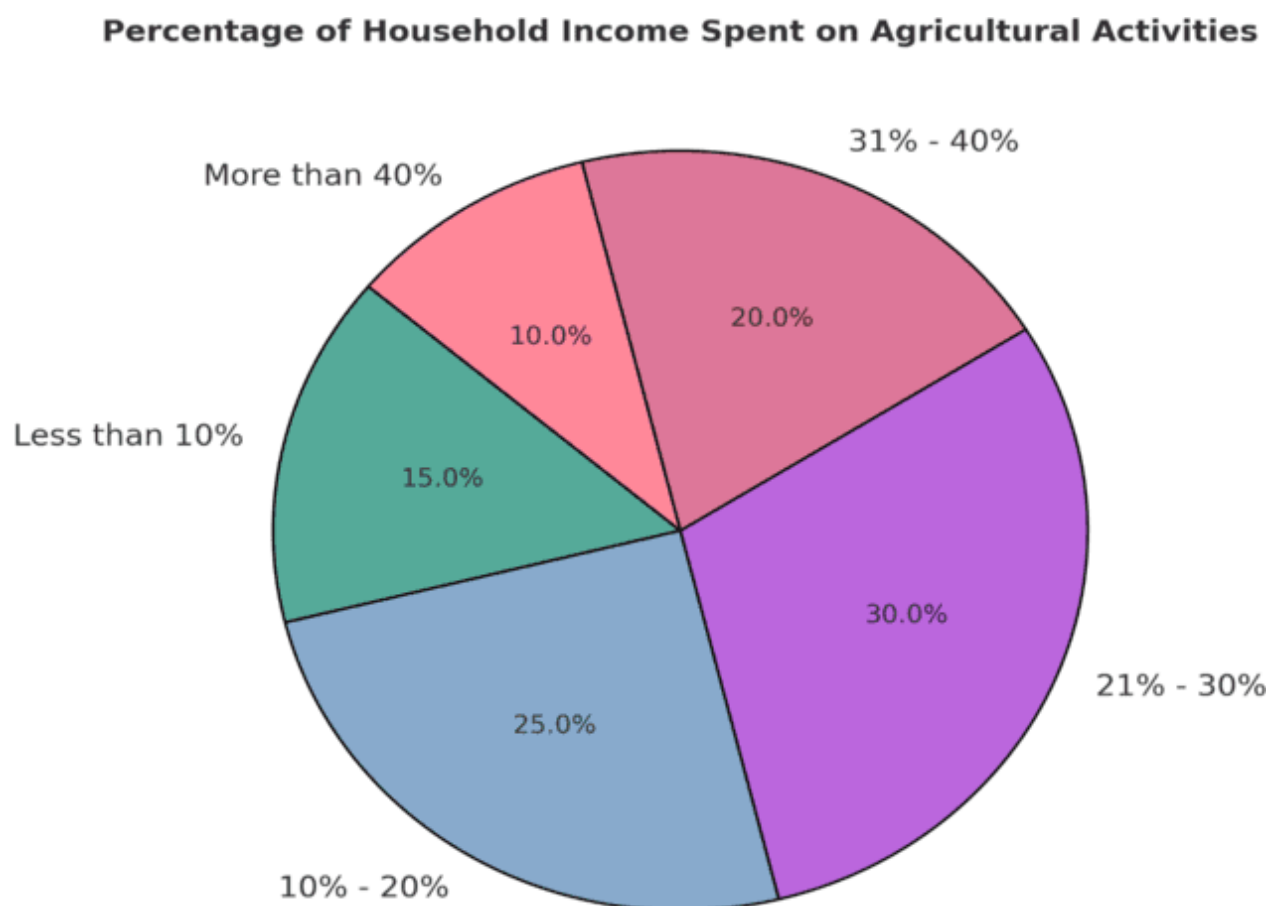
This data highlights the importance of structured financial support for agricultural households and calls for better outreach programs to ensure that marginalized women in agriculture can access the necessary financial aid. Strengthening SHGs, improving microfinance accessibility, and simplifying government subsidy application processes could significantly benefit women farmers in the region.

4.2.3.6 Percentage of Household Income Spent on Agricultural Activities:

**Table 18: Percentage of Household Income Spent on Agricultural Activities
Status (Kurukshetra District)**

Income Spent Category	Number of Households	Percentage (%)
Less than 10%	30	15
10% - 20%	50	25
21% - 30%	60	30
31% - 40%	40	20
More than 40%	20	10
Total	200	100

**Chart 18: Percentage of Household Income Spent on Agricultural Activities
Status (Kurukshetra District)**



The table and the pie chart above illustrate the distribution of household income allocated to agricultural activities among women participants in the Kurukshetra district. The findings indicate that a significant portion of households (30%) allocate between 21% - 30% of their income to agricultural work, making it the most common spending range. This suggests that agricultural investments are a major financial commitment for many households, reflecting their dependency on farming for their livelihood.

Interestingly, 25% of the households allocate between 10% - 20%, showing that a sizable segment of families manages to keep their agricultural spending relatively low, possibly due to smaller landholdings or reliance on traditional, cost-effective farming techniques. On the other hand, 20% of the households spend 31% - 40% of their total income on agricultural activities, suggesting a higher dependency on external resources, fertilizers, or hired labor.

A small yet notable 10% of the households invest more than 40% of their total earnings into agriculture. This indicates that a subset of families prioritizes agricultural expansion, either through mechanization, modern techniques, or large-scale cultivation. Conversely, 15% of households allocate less than 10% of their income towards farming, which could indicate alternative income sources, government subsidies, or diversified livelihoods.

The pie chart visually represents these findings in a way that highlights the proportional differences among the categories. The varying segment sizes effectively depict how agricultural investment is distributed across different economic groups, emphasizing the diverse financial commitments within agricultural households. The chart also brings out a key insight: while some families dedicate a majority of their income to agriculture, others are able to balance their expenses, showcasing the economic variations among women in agricultural households.

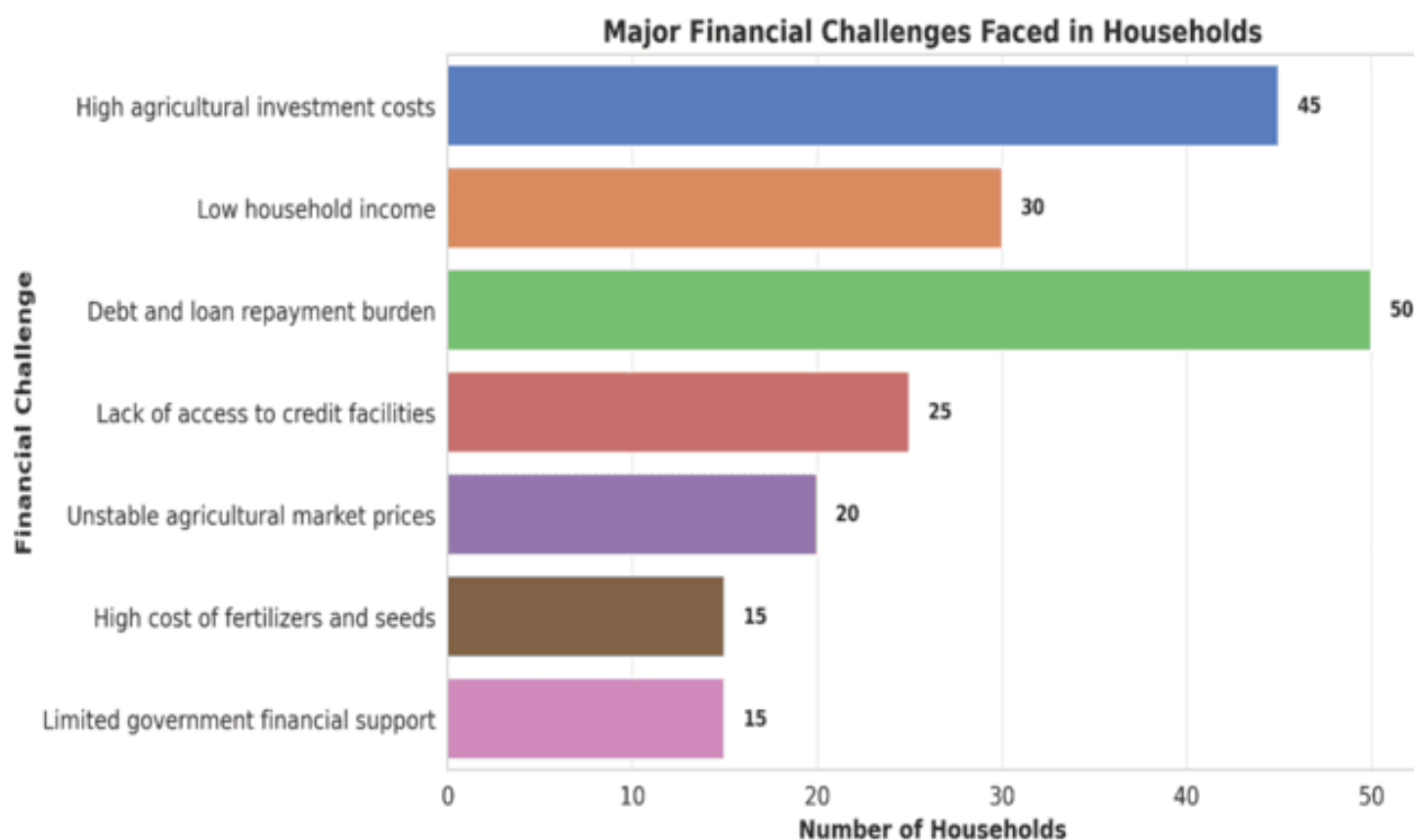
These findings are crucial for understanding the financial challenges faced by women in agriculture, as the high proportion of income spent on farming activities could potentially limit their economic independence and household savings. Understanding these financial constraints can provide key insights for policymakers, NGOs, and financial institutions aiming to support female farmers through subsidies, financial aid, and skill-development programs.

4.2.3.7 Major Financial Challenges Faced in Household:

**Table 19: Major Financial Challenges Faced Status in Households
(Kurukshetra District)**

Financial Challenge	Number of Households	Percentage
High agricultural investment costs	45	22.5
Low household income	30	15.0
Debt and loan repayment burden	50	25.0
Lack of access to credit facilities	25	12.5
Unstable agricultural market prices	20	10.0
High cost of fertilizers and seeds	15	7.5
Limited government financial support	15	7.5
Total	200	100.0

**Chart 19: Major Financial Challenges Faced Status in Households
(Kurukshetra District)**



The table and horizontal bar chart above present a detailed analysis of the major financial challenges faced by households involved in agriculture in Kurukshetra District. With a sample size of 200 participants, it is evident that debt and loan repayment burden stands as the most significant financial constraint, affecting 50 households, which accounts for 25% of the total surveyed participants. This suggests that many agricultural families struggle with financial liabilities, potentially hindering their economic stability.

Additionally, high agricultural investment costs emerge as another major concern, impacting 45 households (22.5%). The high costs associated with farming inputs, such as seeds, fertilizers, and machinery, significantly affect agricultural profitability. Low household income is another pressing issue, affecting 30 households (15%), which suggests that despite active agricultural participation, many women find it difficult to sustain their families solely through farming.

Other notable financial constraints include lack of access to credit facilities (12.5%), unstable agricultural market prices (10%), and high cost of fertilizers and seeds (7.5%). These factors highlight the unpredictable nature of the agricultural sector and its direct impact on women's livelihoods. Moreover, limited government financial support was reported by 15 households (7.5%), indicating the need for more inclusive financial policies and agricultural subsidies for women farmers.

The horizontal bar chart visually represents these financial challenges, making it easier to compare the magnitude of each issue. The chart illustrates how debt burden and high investment costs are the dominant concerns, emphasizing the necessity for financial aid programs, loan restructuring, and improved market price stabilization policies. The findings suggest an urgent need for policy interventions that can provide financial relief, better credit access, and more sustainable agricultural investment opportunities for women in Kurukshetra's agricultural sector.

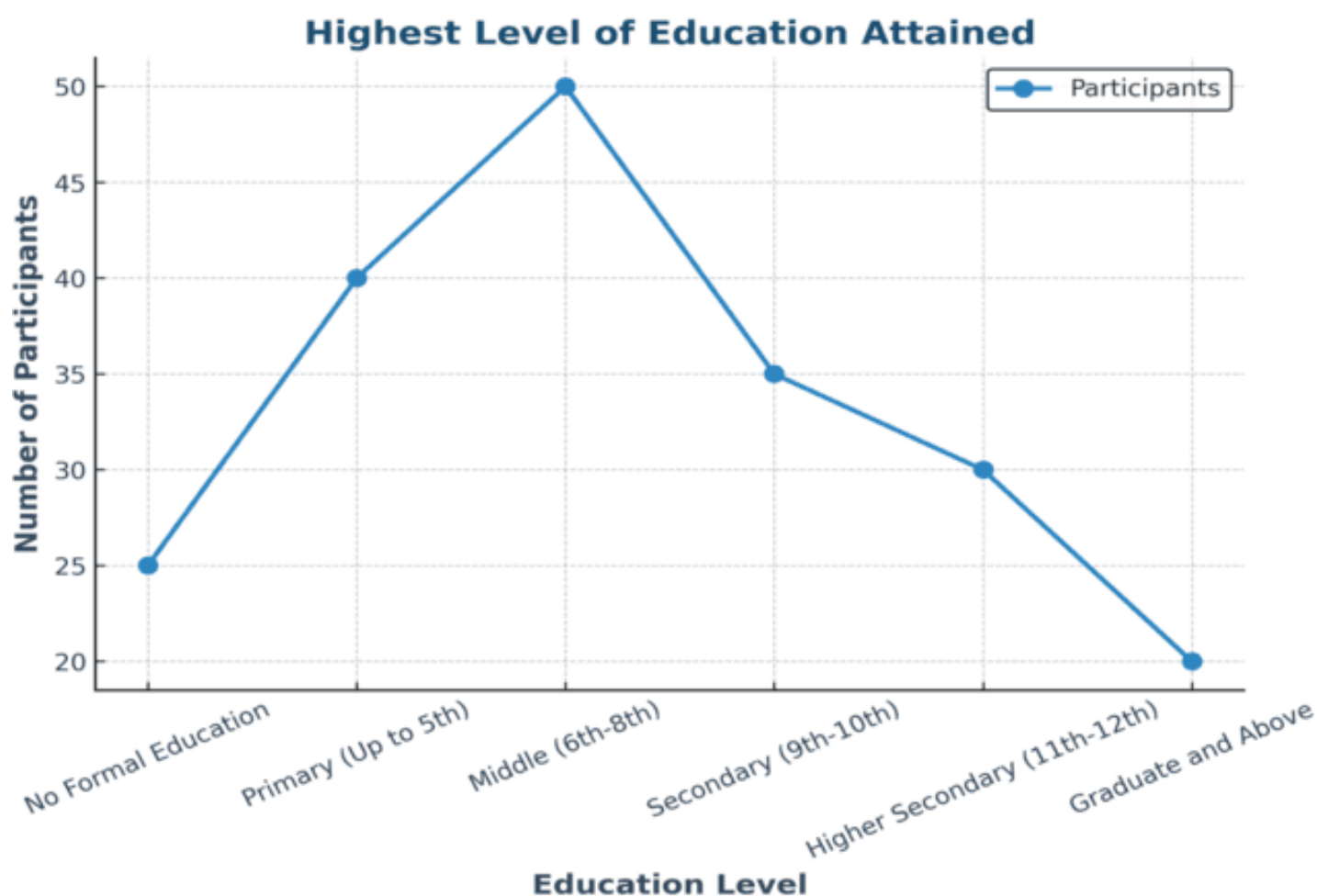
4.2.4 Education and Skill Development:

4.2.4.1 Highest Level of Education Attained:

Table 20: Highest Level of Education Attained Status (Kurukshetra District)

Education Level	Number of Participants	Percentage (%)
No Formal Education	25	12.5
Primary (Up to 5th)	40	20.0
Middle (6th-8th)	50	25.0
Secondary (9th-10th)	35	17.5
Higher Secondary (11th-12th)	30	15.0
Graduate and Above	20	10.0
Total	200	100.0

Chart 20: Highest Level of Education Attained Status (Kurukshetra District)



The data presented in the table and chart provide an insightful overview of the highest level of education attained by women engaged in agriculture in the Kurukshetra district. Education plays a critical role in shaping women's participation in agricultural activities and their ability to access better opportunities for livelihood. The study, based on a sample size of 200 respondents, highlights the educational background of these women, shedding light on the barriers and opportunities they face.

From the table, it is evident that the largest group of participants (50 women, accounting for 25%) have completed middle school education (6th–8th standard). This suggests that while primary education is relatively accessible, progression beyond middle school sees a gradual decline. The second highest category includes women with primary education (40 participants, 20%), followed by secondary education (35 participants, 17.5%). A noticeable decline is observed as we move toward higher education, with only 30 participants (15%) completing

higher secondary (11th–12th) and just 20 women (10%) attaining graduate-level education and above. On the other hand, 25 participants (12.5%) reported having no formal education, which is a significant concern as it directly affects their access to knowledge-based agricultural practices.

The line chart with markers visually represents this data, clearly showing a peak in the middle school category before declining steadily towards higher education levels. The trend suggests that while a majority of women have basic literacy, very few have the opportunity to advance to higher education. The data reflects socio-economic and cultural barriers that limit women’s educational attainment in rural agricultural communities.

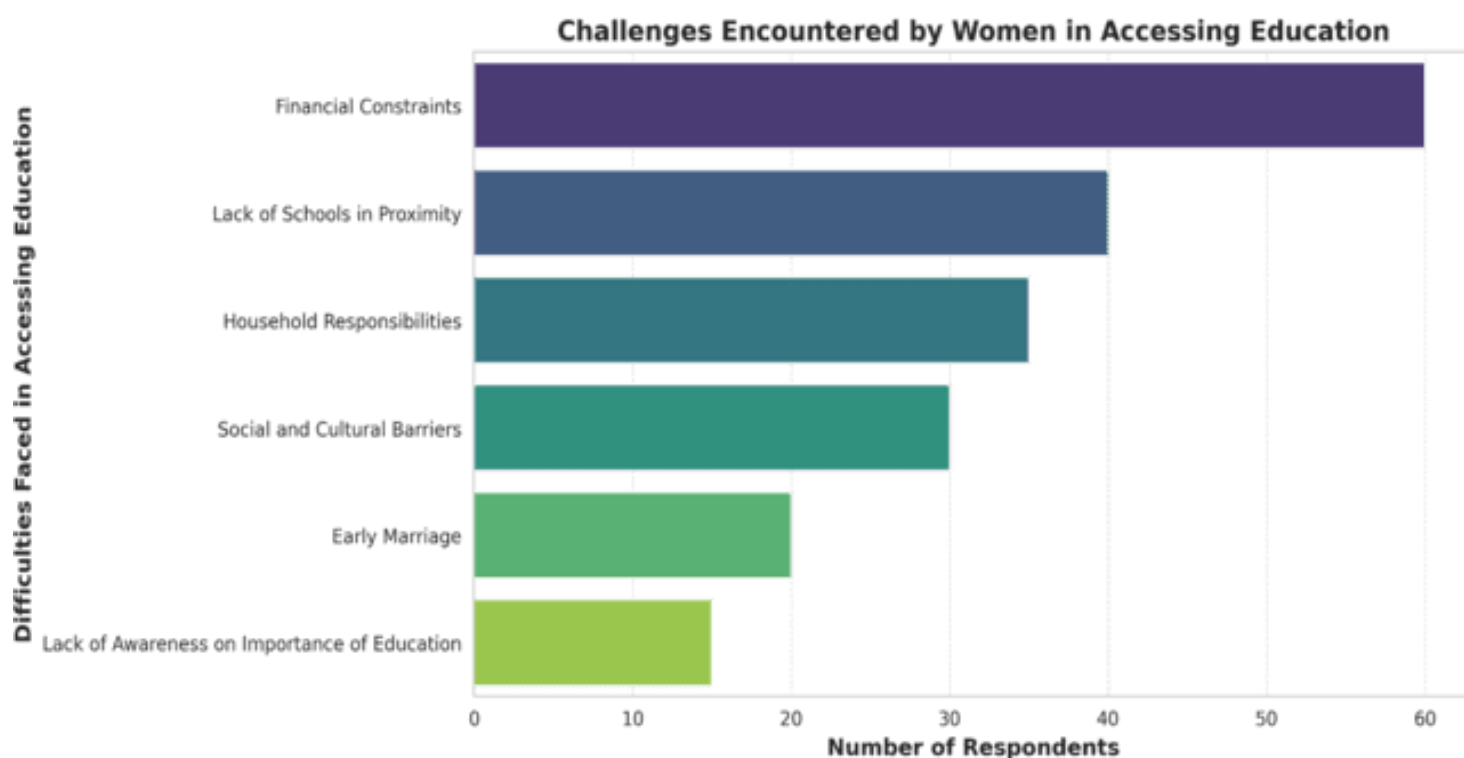
These findings highlight the pressing need for policy interventions to encourage higher education and skill development among women in agriculture. Providing targeted educational programs, financial support, and skill-based training can significantly enhance women's roles in agricultural productivity, decision-making, and overall economic empowerment.

4.2.4.2 Difficulties Faced in Accessing Education:

Table 21: Difficulties Faced in Accessing Education Status (Kurukshetra District)

Challenges in Accessing Education	Number of Respondents	Percentage (%)
Financial Constraints	60	30.0
Lack of Nearby Schools	40	20.0
Household Responsibilities	35	17.5
Social and Cultural Barriers	30	15.0
Early Marriage	20	10.0
Lack of Awareness	15	7.5
Total	200	100.0

Chart 21: Difficulties Faced in Accessing Education Status (Kurukshetra District)



The data presented in the table and chart illustrate the key challenges faced by women in accessing education in the Kurukshetra district of Haryana. Among the identified barriers, financial constraints emerge as the most significant, affecting 60 respondents, which accounts for 30% of the total sample. This finding underscores the economic difficulties that many families face, limiting their ability to invest in education, especially for women. The burden of educational expenses, including tuition fees, books, and transportation, often becomes a deterrent for families with limited financial resources, particularly in rural areas where income levels are relatively low.

The second most common barrier is the lack of nearby schools, reported by 40 respondents (20%). The absence of educational institutions in close proximity discourages many women from pursuing education due to the time and cost associated with traveling long distances. This challenge is particularly acute in rural settings, where inadequate infrastructure and poor transportation facilities further hinder access to education. The need to travel significant distances to attend school often results in lower enrolment rates among women, leading to higher dropout rates at secondary and higher education levels.

Household responsibilities also play a crucial role in restricting women's access to education, as indicated by 35 respondents (17.5%). Many women are expected to contribute to domestic work, care for younger siblings, and participate in agricultural activities, which reduces the time available for formal education. This societal expectation often places education as a secondary priority, particularly in households where traditional gender roles remain deeply ingrained. The competing demands of domestic labor and education make it challenging for women to sustain their studies, leading to interruptions or complete withdrawal from formal education.

Social and cultural barriers were cited by 30 respondents (15%), reflecting the prevailing societal norms and gender biases that discourage women from obtaining higher education. In many communities, traditional beliefs emphasize early marriage and domestic responsibilities over education for women, reinforcing the notion that their primary role is within the household. Additionally, societal perceptions regarding the necessity of women's education often lead to restrictions on their mobility, limiting their opportunities for academic advancement.

Early marriage was identified as a challenge by 20 respondents (10%). Many young women in rural areas are married off at an early age, reducing their ability to continue their education. Early marriage often comes with responsibilities such as household management and child-rearing, making it nearly impossible for young brides to pursue further studies. The practice of early marriage not only curtails educational opportunities but also contributes to the cycle of limited economic independence and restricted career prospects for women.

Lastly, a lack of awareness about the importance of education affects 15 respondents (7.5%). In some communities, families and individuals may not fully recognize the long-term benefits of education for women, leading to indifference toward their academic pursuits. This lack of awareness results in low motivation for families to support female education, often viewing it as unnecessary beyond basic literacy levels.

The data collectively highlight the multifaceted challenges that women face in accessing education, influenced by financial, infrastructural, societal, and cultural factors. Addressing these barriers requires targeted interventions, including financial aid programs, improvements in educational infrastructure, awareness campaigns, and policies that promote gender equality in education. Strengthening these areas will be crucial in enhancing educational opportunities

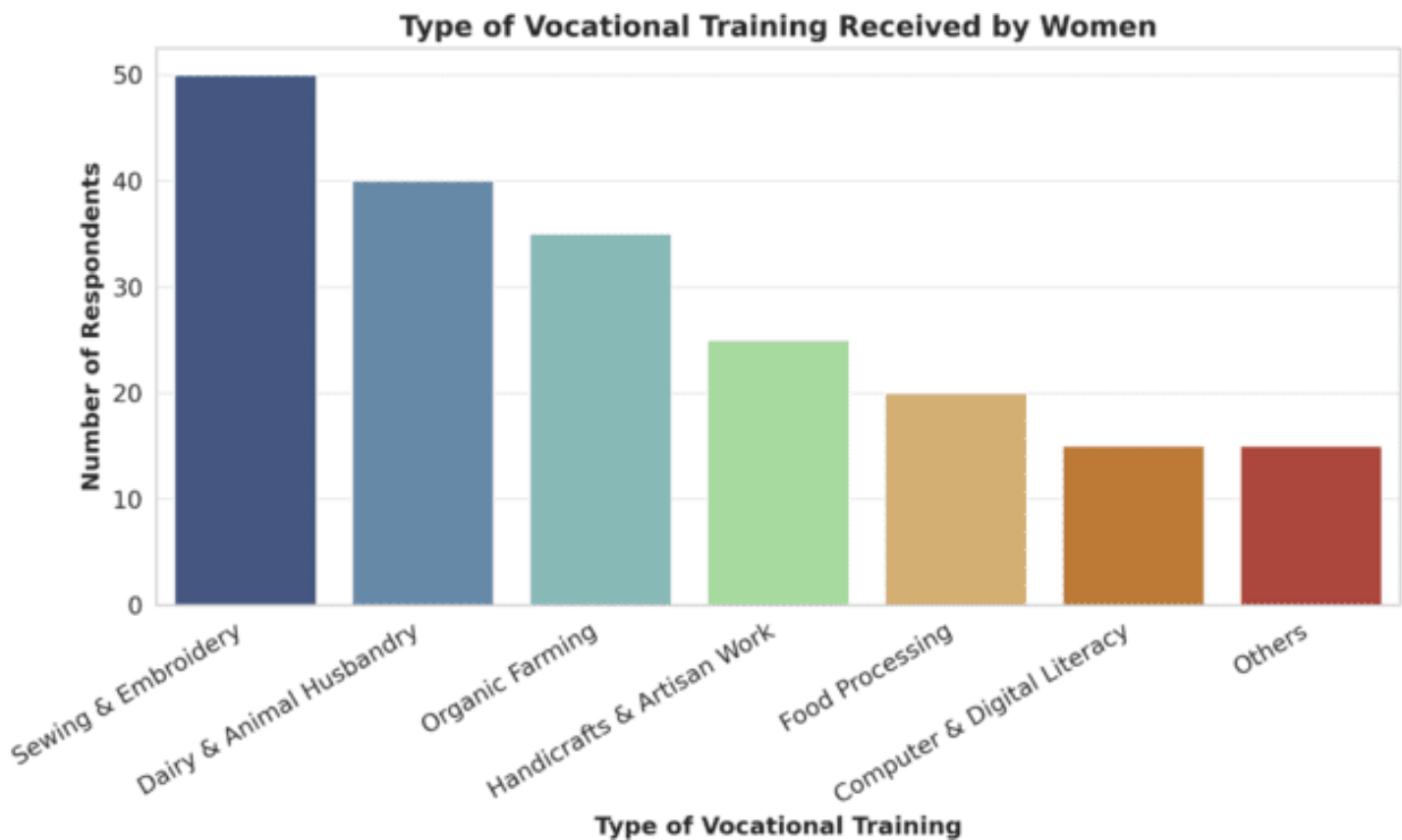
for women in rural Haryana, ultimately improving their socioeconomic status and livelihood prospects.

4.2.4.3 Type of Vocational Training Received:

Table 22: Type of Vocational Training Received Status (Kurukshetra District)

Type of Vocational Training	Number of Respondents	Percentage (%)
Sewing & Embroidery	50	25.0
Dairy & Animal Husbandry	40	20.0
Organic Farming	35	17.5
Handicrafts & Artisan Work	25	12.5
Food Processing	20	10.0
Computer & Digital Literacy	15	7.5
Others	15	7.5
Total	200	100.0

Chart 22: Type of Vocational Training Received Status (Kurukshetra District)



The table and vertical column chart comprehensively present data on the types of vocational training received by women in the Kurukshetra district, Haryana, based on a sample of 200 respondents. This data provides critical insights into the nature of skill development among women engaged in agriculture and allied sectors, highlighting the key areas where training is most prevalent and where further efforts may be needed.

Among the various types of vocational training, Sewing & Embroidery emerges as the most common, with 50 respondents (25%) participating in this form of skill enhancement. This indicates the sustained relevance of textile-based employment opportunities for rural women, particularly in self-employment and cottage industries. Dairy & Animal Husbandry follows closely, accounting for 40 respondents (20%), which reflects the critical role of livestock rearing in rural livelihoods. The significant percentage in this category underscores how women contribute to agricultural sustainability through activities such as dairy farming, poultry, and animal care, which serve as reliable sources of income.

Additionally, Organic Farming has been identified as a key area of vocational training, with 35 respondents (17.5%) having received formal training in sustainable agricultural methods. The adoption of organic farming practices is gaining traction, driven by increased awareness of environmental sustainability, market demand for organic produce, and governmental support programs. Other notable vocational training categories include Handicrafts & Artisan Work (12.5%), which allows women to engage in traditional crafts such as pottery, weaving, and handmade jewelry. Food Processing (10%) also forms a crucial aspect of skill development, equipping women with the ability to add value to agricultural products through activities such as dairy processing, pickling, and bakery production.

Despite the growing significance of digital skills in modern agriculture and business, Computer & Digital Literacy training remains relatively low at 7.5%, suggesting that access to technology and digital education remains a challenge for rural women. This indicates the need for expanded digital literacy programs to improve access to online markets, financial transactions, and agricultural information. The 'Others' category (7.5%) includes various skill development programs, such as tailoring, marketing, and personal development courses, demonstrating some level of diversification in vocational training efforts.

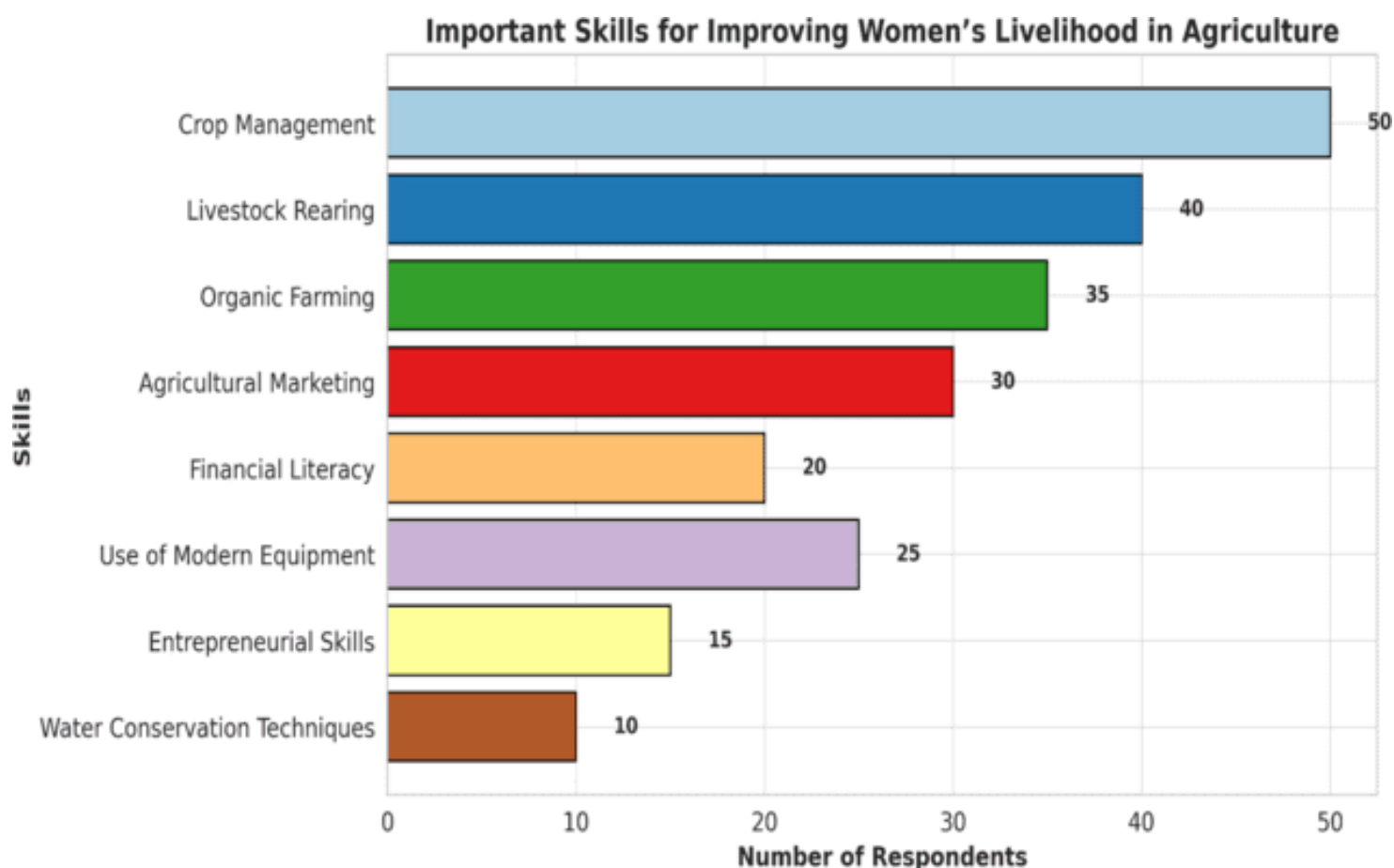
The findings suggest that while traditional skills such as embroidery, dairy farming, and organic agriculture dominate vocational training programs, there is an increasing need for digital literacy and modern agribusiness training. Policymakers and development organizations must focus on enhancing accessibility to diverse training programs that cater to both conventional and emerging skill areas. Expanding training opportunities in technology-based agriculture, marketing, and value addition could significantly improve women's economic prospects and their ability to contribute more effectively to the agricultural sector. This data serves as a foundation for targeted interventions that aim to empower rural women through vocational training tailored to their specific needs and livelihood aspirations.

4.2.4.4 Important Skills for Improving Women's Livelihood in Agriculture:

**Table 23: Important Skills for Improving Women's Livelihood in
Agriculture Status (Kurukshetra District)**

Skills	Number of Respondents	Percentage (%)	Ranking
Crop Management	50	25.0	1
Livestock Rearing	40	20.0	2
Organic Farming	35	17.5	3
Agricultural Marketing	30	15.0	4
Financial Literacy	20	10.0	5
Use of Modern Equipment	25	12.5	6
Entrepreneurial Skills	15	7.5	7
Water Conservation Techniques	10	5.0	8
-	200	100.0	-

Chart 23: Important Skills for Improving Women's Livelihood in Agriculture Status (Kurukshetra District)



Developing the right skills is crucial for enhancing women's participation in agriculture and improving their livelihoods. The data, based on a sample of 200 respondents, highlights the key skills required for women in agriculture, along with their relative importance.

Among the identified skills, Crop Management ranks highest, with 50 respondents (25%) considering it essential. This reflects the importance of knowledge in soil preparation, pest control, crop rotation, and yield optimization to improve agricultural productivity. Livestock Rearing follows closely, with 40 respondents (20%), emphasizing the role of animal husbandry in diversifying income sources for women in rural areas. Training in Organic Farming is also highly regarded, with 35 respondents (17.5%), signifying a growing interest in sustainable and eco-friendly agricultural practices that can enhance soil fertility and market value.

Agricultural Marketing is identified as a critical skill by 30 respondents (15%), demonstrating the need for women to gain expertise in selling their produce, negotiating fair prices, and accessing markets effectively. Additionally, Financial Literacy, noted by 20 respondents (10%), is vital for enabling women to manage their earnings, secure loans, and make informed economic decisions. The ability to use modern farming equipment is valued by 25 respondents (12.5%), indicating the necessity of technological adaptation to improve efficiency.

Lower-ranked but still significant, Entrepreneurial Skills and Water Conservation Techniques received 15 (7.5%) and 10 (5%) votes, respectively. While fewer respondents prioritized these, they are still critical for long-term agricultural sustainability and self-sufficiency.

The Horizontal Bar Chart clearly illustrates the varying levels of importance assigned to each skill. The length of the bars allows for easy comparison, highlighting Crop Management and Livestock Rearing as the most in-demand skills, while Water Conservation Techniques appears as the least emphasized but still relevant. The structured representation of data helps in identifying the priority areas for training programs and skill development initiatives that can be implemented to empower women in agriculture.

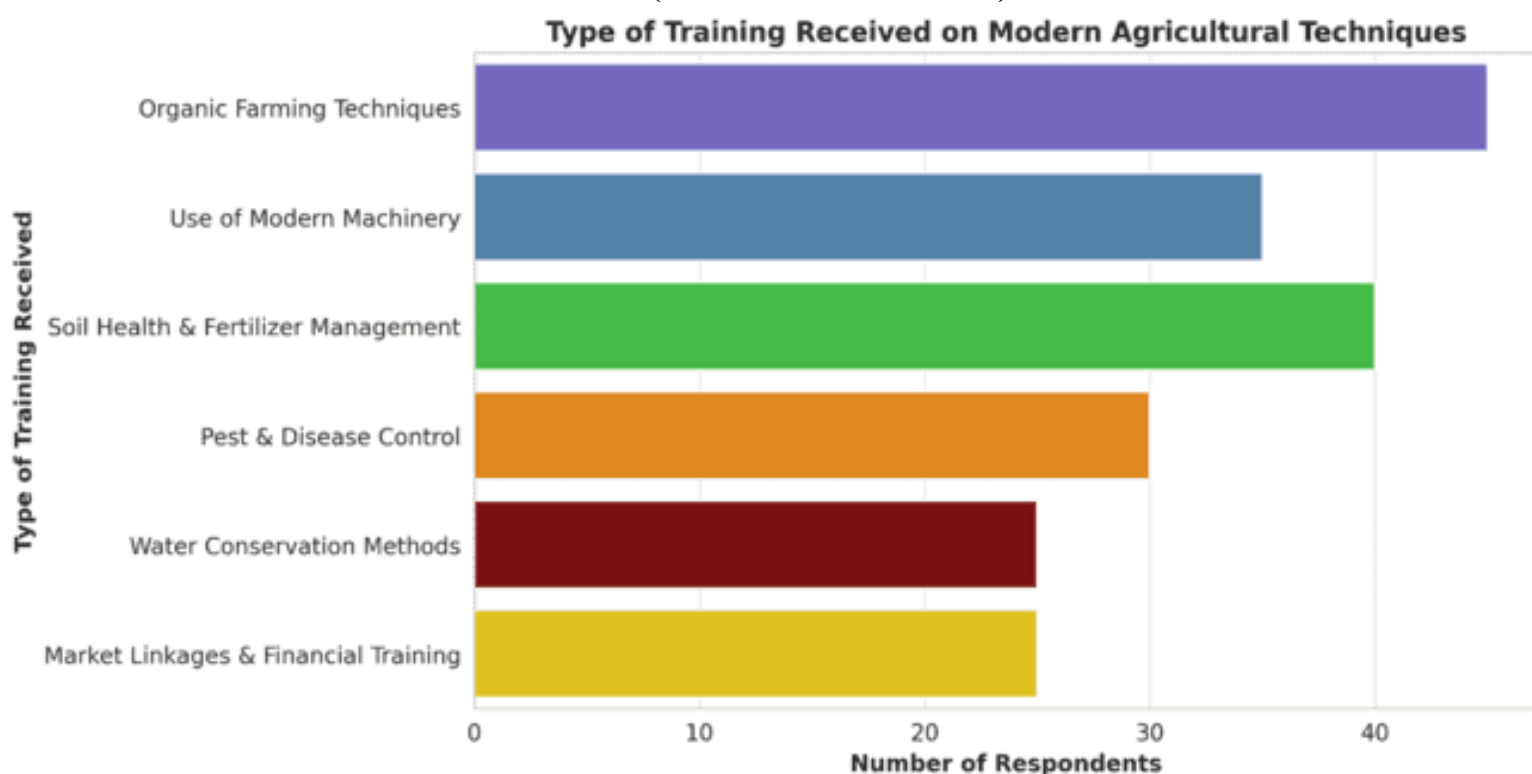
This statistical representation provides insightful direction for policymakers, NGOs, and training institutions looking to design targeted interventions that cater to the specific skill requirements of women engaged in agriculture. By focusing on these key areas, efforts can be streamlined to enhance women's productivity, self-reliance, and economic stability in the agricultural sector.

4.2.4.5 Type of Training Received on Modern Agricultural Techniques:

**Table 24: Type of Training Received on Modern Agricultural Techniques
Status (Kurukshetra District)**

Type of Training Received	Number of Respondents	Percentage (%)
Organic Farming Techniques	45	22.5
Use of Modern Machinery	35	17.5
Soil Health & Fertilizer Management	40	20.0
Pest & Disease Control	30	15.0
Water Conservation Methods	25	12.5
Market Linkages & Financial Training	25	12.5
Total	200	100.0

**Chart 24: Type of Training Received on Modern Agricultural Techniques
Status (Kurukshetra District)**



The data presented in the table and chart provide a comprehensive analysis of the different types of training received by women in the agricultural sector, highlighting their significance in improving livelihood opportunities. The findings are based on a sample size of 200 respondents, offering a clear statistical representation of the training areas that have been emphasized in modern agricultural practices.

Among the various training types, Organic Farming Techniques emerged as the most widely received form of training, with 45 respondents (22.5%) indicating participation. This reflects the increasing awareness and adoption of sustainable agricultural practices that reduce dependency on chemical fertilizers and pesticides. Given the rising demand for organic produce and the push for eco-friendly farming, it is evident that women in agriculture are actively seeking knowledge in this domain to improve productivity and marketability.

Soil Health & Fertilizer Management was the second most common training type, with 40 respondents (20%) reporting engagement in this area. This indicates the critical role soil fertility plays in ensuring sustainable crop yields. Proper training in soil management techniques, including organic composting and balanced fertilizer use, helps women farmers optimize agricultural productivity while preserving soil health in the long term.

Use of Modern Machinery training was received by 35 respondents (17.5%), highlighting the increasing mechanization of agricultural activities. Access to and knowledge of modern farming equipment can significantly enhance efficiency, reduce manual labor, and increase overall yield. However, the slightly lower percentage suggests that there may still be challenges in accessibility to modern machinery for women farmers, possibly due to financial constraints or lack of infrastructural support.

Pest & Disease Control training was undertaken by 30 respondents (15%). The importance of this training lies in its direct impact on crop protection and yield improvement. Knowledge of integrated pest management, bio-pesticides, and disease prevention measures equips women farmers with essential skills to minimize crop losses and ensure food security.

Both Water Conservation Methods and Market Linkages & Financial Training were received by 25 respondents each (12.5%). Water conservation training is crucial for sustainable farming, especially in areas affected by irregular rainfall patterns or groundwater depletion. It empowers women farmers with techniques such as rainwater harvesting and drip irrigation, which are essential for efficient water use. Similarly, financial training and market linkages are vital in enabling women to access credit, manage farm finances effectively, and find profitable markets.

for their produce. The equal percentage of respondents in these two categories suggests that both aspects require more focus to enhance the economic empowerment of women in agriculture.

The data reflect a diverse range of training areas that women have accessed to improve their agricultural livelihoods. While organic farming and soil health management appear to be the most prioritized, there is a need for greater emphasis on mechanization, pest control, water conservation, and financial literacy to ensure holistic agricultural development. The findings also highlight the necessity for targeted interventions that address specific gaps in training access, thereby fostering a more inclusive and progressive approach to women's agricultural empowerment.

4.2.4.6 Different Ways for Receiving Skill Development Training:

**Table 25: Different Ways for Receiving Skill Development Training Status
(Kurukshetra District)**

Ways of Receiving Training	Number of Respondents	Percentage (%)
Government Training Programs	50	25.0
NGO Initiatives	35	17.5
Self-Help Groups	40	20.0
Agricultural Extension Services	30	15.0
Online Training Platforms	25	12.5
Community-Based Training	20	10.0
Total	200	100.0

**Chart 25: Different Ways for Receiving Skill Development Training Status
(Kurukshetra District)**



Skill development training plays a crucial role in enhancing the livelihood opportunities of women in agriculture. Various channels provide training opportunities, and understanding their distribution helps in optimizing resources and ensuring effective learning. The table and chart above present an insightful breakdown of the different ways in which skill development training is received among women in agriculture in Kurukshetra district, Haryana.

From the table, it is evident that the most significant source of skill development training is Government Training Programs, with 50 respondents (25%). These initiatives, often backed by policies and funding, provide structured courses and workshops focusing on modern farming techniques, entrepreneurship, and financial literacy. Self-Help Groups (SHGs) also play a crucial role, catering to 40 respondents (20%). SHGs facilitate peer learning, financial

assistance, and collaborative farming techniques, thereby empowering women at the grassroots level. NGO Initiatives account for 35 respondents (17.5%), contributing significantly through awareness campaigns, hands-on training, and providing access to resources.

Agricultural Extension Services are also an important means of training, with 30 respondents (15%) benefiting from expert guidance, field demonstrations, and scientific approaches to farming. Additionally, Online Training Platforms, though still emerging, serve 25 respondents (12.5%). These platforms provide flexibility in learning through video tutorials, live sessions, and virtual workshops, allowing women to gain knowledge at their convenience. Community-Based Training has the lowest representation, with 20 respondents (10%), yet it remains an essential method in rural settings, where localized learning through village-level meetings and practical demonstrations can be highly effective.

The vertical column chart visually represents these findings, with each category distinctly highlighted using a bold and professional color palette. The government training programs stand out as the most utilized, followed by SHGs and NGO initiatives. The staggered height of the bars provides an immediate comparison, emphasizing the varying levels of accessibility and participation in different training methods.

This statistical analysis highlights the need for a more inclusive approach to training distribution. While government programs are widely accessed, strengthening NGO interventions and expanding digital literacy for better online training adoption can significantly improve outreach. Encouraging more community-based training can also ensure that women in remote areas receive adequate skill development support. The insights from this data reinforce the importance of tailoring training programs to match the needs and accessibility of women in agriculture.

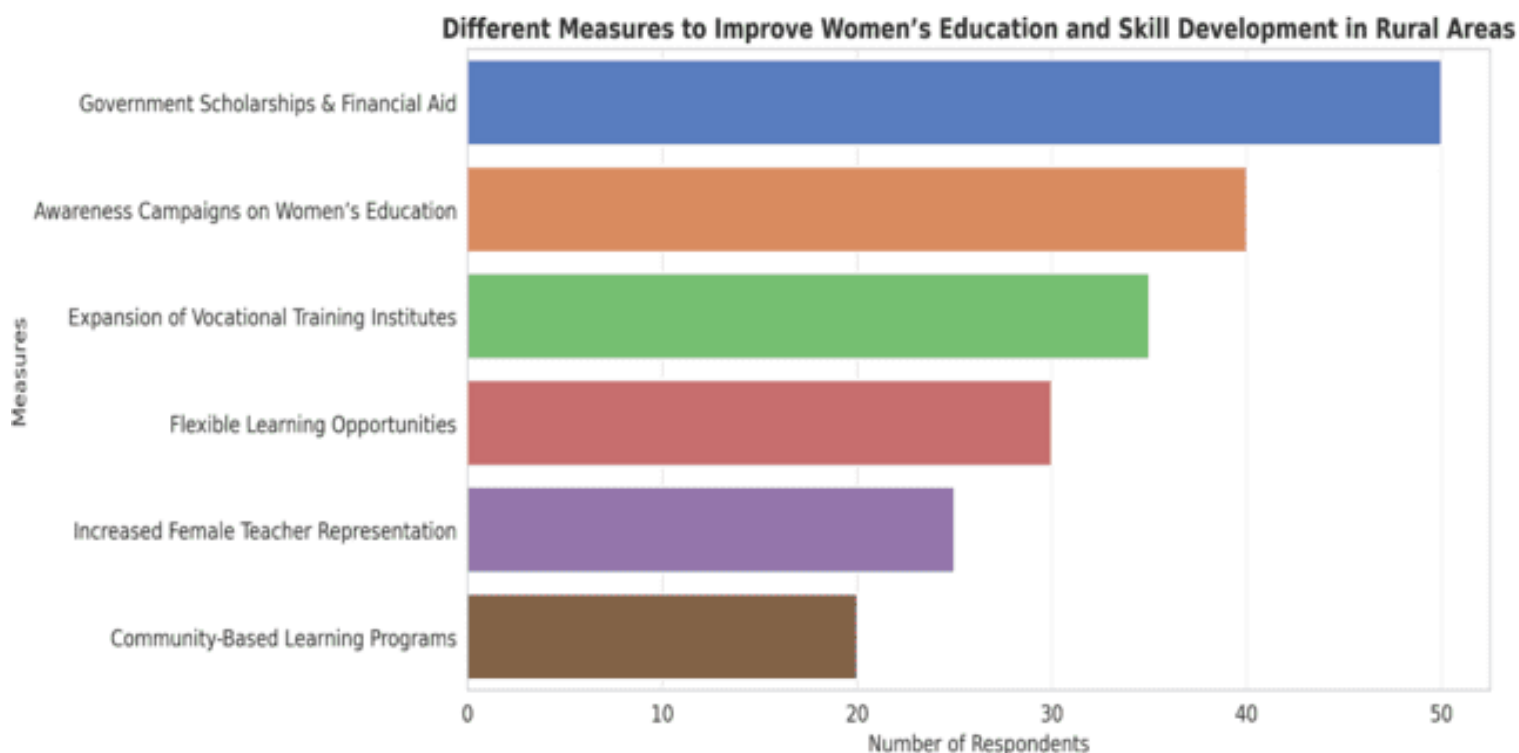
4.2.4.7 Different Measures to Improve Women's Education and Skill

Development in Rural Areas:

**Table 26: Different Measures to Improve Women's Education and Skill
Development in Rural Areas (Kurukshetra District)**

Measures	Number of Respondents	Percentage (%)
Government Scholarships & Financial Aid	50	25.0
Awareness Campaigns on Women's Education	40	20.0
Expansion of Vocational Training Institutes	35	17.5
Flexible Learning Opportunities	30	15.0
Increased Female Teacher Representation	25	12.5
Community-Based Learning Programs	20	10.0
Total	200	100.0

Chart 26: Different Measures to Improve Women's Education and Skill Development in Rural Areas (Kurukshetra District)



The bar chart and table present an analysis of various measures aimed at improving women's education and skill development in rural areas. The data is based on responses from 200 individuals, distributed across six key initiatives.

The most favoured measure is "Government Scholarships & Financial Aid," which received the highest support from 50 respondents, accounting for 25% of the total. This highlights the critical role of financial assistance in ensuring women's access to education. The second most preferred measure is "Awareness Campaigns on Women's Education," with 40 respondents (20%), reflecting the importance of advocacy and information dissemination in addressing educational gaps.

The "Expansion of Vocational Training Institutes" follows closely, with 35 respondents (17.5%), indicating significant interest in skill-based learning opportunities tailored to rural women. "Flexible Learning Opportunities" was endorsed by 30 respondents (15%), emphasizing the necessity of adaptable learning modes that accommodate various socio-economic constraints.

"Increased Female Teacher Representation" was selected by 25 respondents (12.5%), underscoring the importance of gender representation in educational institutions to foster a more inclusive learning environment. Lastly, "Community-Based Learning Programs" garnered support from 20 respondents (10%), highlighting the role of localized and community-driven initiatives in facilitating women's education.

These findings suggest that while financial support is the most critical factor, awareness programs, vocational training, and flexible learning play equally essential roles in enhancing women's educational opportunities. Additionally, increasing female teacher representation and community-based programs can further strengthen efforts to address gender disparities in education.

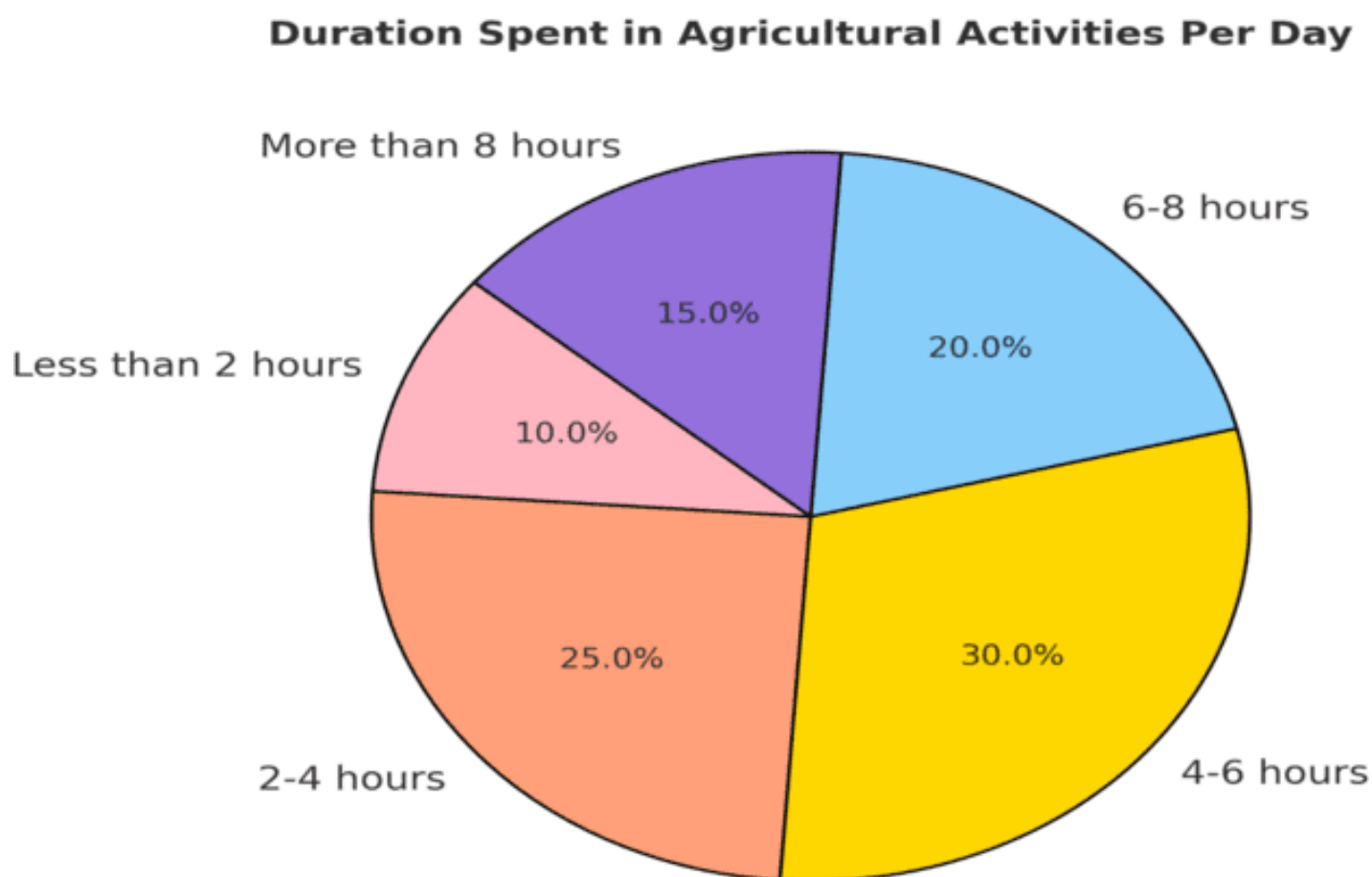
4.2.5 Health and Working Conditions:

4.2.5.1 Duration Spent in Agricultural Activities Per Day:

**Table 27: Duration Spent in Agricultural Activities Per Day Status
(Kurukshetra District)**

Duration Spent in Agriculture	Number of Women	Percentage (%)	Work Intensity Level	Health Impact
Less than 2 hours	20	10.0	Low	Minimal
2-4 hours	50	25.0	Moderate	Mild Fatigue
4-6 hours	60	30.0	High	Body Pain
6-8 hours	40	20.0	Very High	Severe Fatigue
More than 8 hours	30	15.0	Extreme	Chronic Issues

**Chart 27: Duration Spent in Agricultural Activities Per Day Status
(Kurukshetra District)**



The table and the pie chart above present a comprehensive statistical representation of the duration women spend in agricultural activities per day, offering critical insights into the distribution of working hours, their intensity levels, and associated health impacts. The findings indicate that a significant proportion (30%) of women work between 4-6 hours daily, categorizing them under the high work intensity bracket, which frequently results in body pain and moderate fatigue. This is followed by 25% of women engaging in agricultural activities for 2-4 hours per day, which is classified under moderate intensity levels, leading to mild exhaustion but relatively lower health risks. A notable 20% of women work for 6-8 hours daily, falling under the very high intensity category, often experiencing severe fatigue, muscle strain, and long-term discomfort. A concerning 15% of women exceed 8 hours of daily work, making them highly vulnerable to chronic physical stress, joint pain, and long-term occupational health issues due to excessive workload exposure. In contrast, only 10% of women spend less than 2

hours per day in agricultural work, facing minimal health consequences but indicating either limited involvement in farming activities or a secondary role in agricultural production.

The pie chart visually represents this distribution in an aesthetically appealing and professional manner, employing a mature, sensible color palette that progresses from lighter to darker hues to depict the increasing intensity of work duration and associated health risks. The largest section (4-6 hours) is represented in bold yellow, highlighting that the majority of women fall into this work duration bracket, making them susceptible to significant occupational fatigue. The 2-4 hour category is shown in a softer orange tone, denoting a moderate level of engagement in agricultural tasks with comparatively lower health risks. The 6-8 hour duration appears in a deep orange shade, emphasizing the demanding nature of agricultural work among these women and the associated physical exertion. The most alarming category, where women work more than 8 hours per day, is marked in deep red, indicating severe physical strain, chronic exhaustion, and the urgent need for intervention in their working conditions. In contrast, the smallest segment (Less than 2 hours) is displayed in a light pink shade, representing women with minimal engagement in agriculture, either due to additional household responsibilities or lower economic dependence on farming.

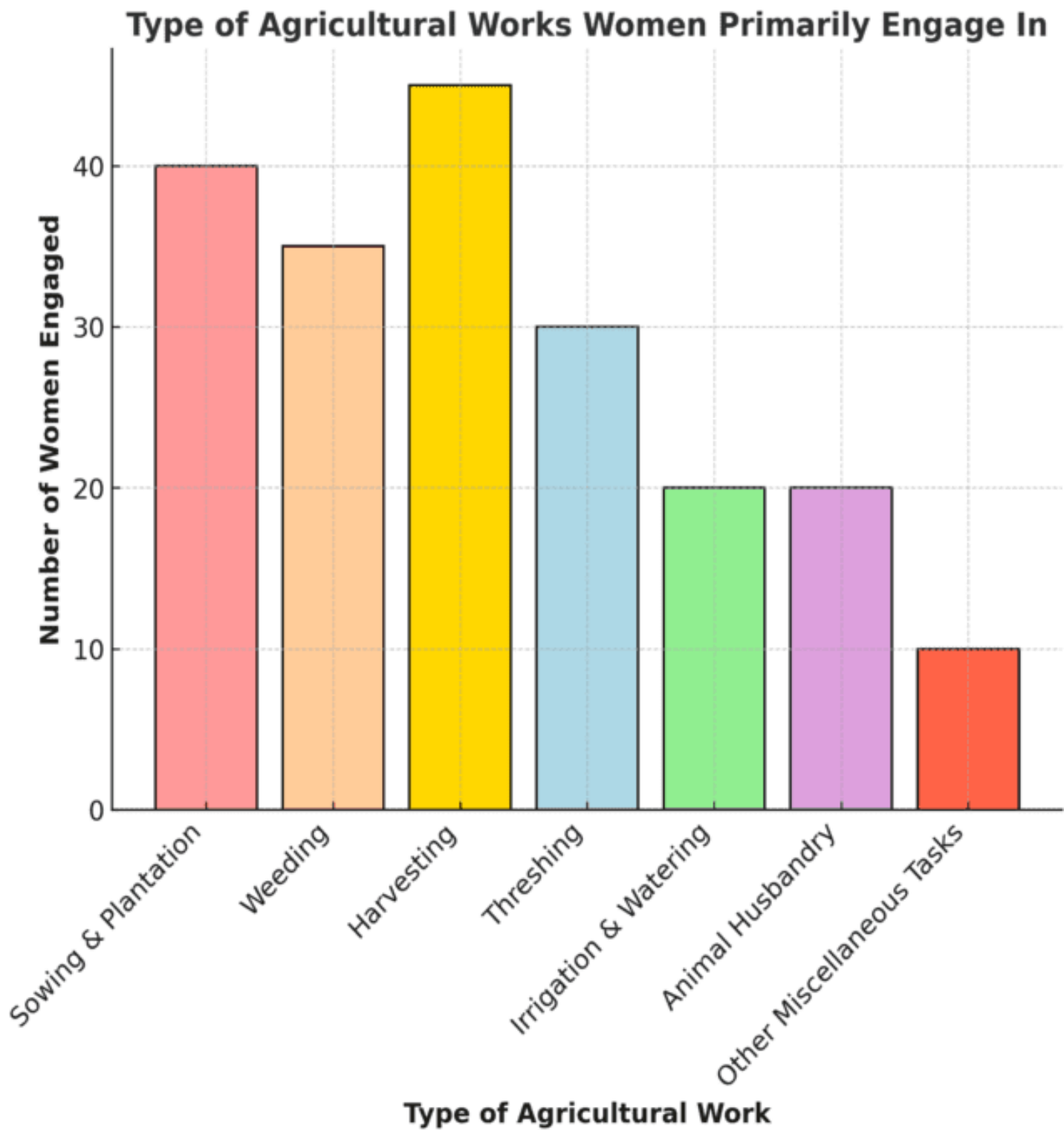
This statistical representation underscores the challenging realities faced by women in agriculture, where a substantial proportion of them endure prolonged working hours, often without adequate occupational safety measures. The findings highlight the pressing need for improved agricultural labor policies, mechanized interventions to reduce manual workload, and targeted health programs to mitigate occupational hazards. Implementing measures such as regulated working hours, ergonomic tools, frequent health check-ups, and increased access to protective gear can significantly enhance the well-being and productivity of women in agriculture. Moreover, these insights reinforce the importance of economic empowerment and diversification of livelihood options, allowing women to pursue alternative income-generating activities with reduced physical strain. The study ultimately calls for a gender-sensitive approach in agricultural labor policies to ensure that women's health and working conditions are prioritized, leading to a more sustainable and equitable agricultural workforce.

4.2.5.2 Type of Agricultural Works Women Primarily Engage In:

**Table 28: Type of Agricultural Works Women Primarily Engage In
(Kurukshetra District)**

Type of Agricultural Work	Number of Women	Percentage (%)
Sowing & Plantation	40	20.0
Weeding	35	17.5
Harvesting	45	22.5
Threshing	30	15.0
Irrigation & Watering	20	10.0
Animal Husbandry	20	10.0
Other Miscellaneous Tasks	10	5.0
Total	200	100.0

**Chart 28: Type of Agricultural Works Women Primarily Engage In
(Kurukshetra District)**



The table and chart provide an in-depth statistical representation of the various agricultural tasks that women in the Kurukshetra district engage in as part of their livelihood. The data reveals that harvesting (22.5%) is the most commonly performed agricultural activity, closely followed by sowing & plantation (20%) and weeding (17.5%), highlighting their essential roles in crop production and maintenance. Threshing (15%) also constitutes a significant portion of their work, as women actively participate in post-harvest processing. Additionally, irrigation and watering (10%), along with animal husbandry (10%), further demonstrate the diversity of their contributions to agricultural sustainability. A small percentage (5%) of women are engaged in other miscellaneous agricultural tasks, indicating that while a majority work in core farming operations, some also perform supportive functions.

The stacked column chart visually enhances the distribution of women's participation in different types of agricultural tasks. The color-coded bars help distinguish between categories, making it easy to compare the extent of involvement across different work types. The dominant height of the bars for harvesting, sowing, and weeding emphasizes their significance in women's daily agricultural activities. The presence of lower but notable engagement in animal husbandry and irrigation suggests that, while primarily involved in fieldwork, women also contribute to farm maintenance and livestock care. The total workforce participation sums to 200, reinforcing the importance of women's involvement in agriculture.

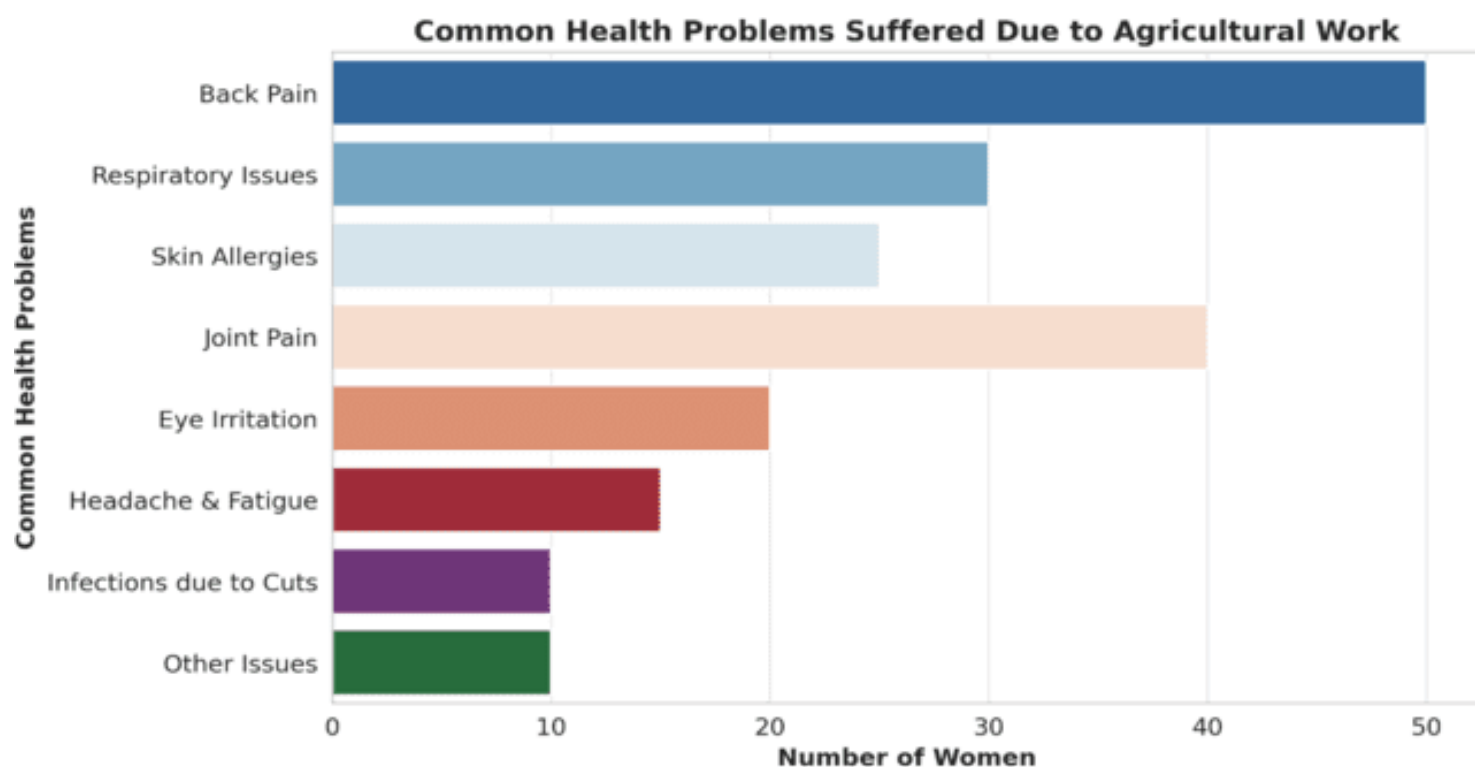
The table and chart combined provide valuable quantitative insights into the division of labor in rural agriculture, underlining the indispensable role of women in sustaining agricultural productivity. These statistics can guide policymakers in designing targeted interventions to enhance work conditions, introduce mechanization, and provide skill-based training to further empower women in agricultural employment.

4.2.5.3 Common Health Problems Suffered Due to Agricultural Work:

**Table 29: Common Health Problems Suffered Due to Agricultural Work
(Kurukshetra District)**

Health Problem	Number of Women	Percentage
Back Pain	50	25.0
Respiratory Issues	30	15.0
Skin Allergies	25	12.5
Joint Pain	40	20.0
Eye Irritation	20	10.0
Headache & Fatigue	15	7.5
Infections due to Cuts	10	5.0
Other Issues	10	5.0
Total	200	100.0

**Chart 29: Common Health Problems Suffered Due to Agricultural Work
(Kurukshetra District)**



The table and horizontal stacked bar chart above provide a comprehensive analysis of the health challenges faced by women engaged in agricultural work in the Kurukshetra district. The data highlights the major health concerns affecting female agricultural workers, showcasing how their strenuous labor, exposure to chemicals, and lack of proper healthcare facilities impact their well-being.

Among the reported health issues, back pain emerges as the most prevalent condition, affecting 50 women (25%), which can be attributed to long hours of bending, lifting, and physically demanding tasks. Joint pain (40 women, 20%) is another widespread issue, emphasizing the repetitive nature of agricultural activities that strain muscles and bones over time. Respiratory issues (30 women, 15%) indicate exposure to dust, pesticides, and other airborne pollutants, which can lead to chronic breathing problems.

Skin allergies (25 women, 12.5%) highlight the consequences of prolonged contact with fertilizers, pesticides, and rough surfaces in the fields. Eye irritation (20 women, 10%) is another critical concern, likely caused by dust exposure and pesticide sprays. Additionally, headache and fatigue (15 women, 7.5%) point toward physical exhaustion and possible dehydration due to working in extreme weather conditions.

While fewer in number, infections due to cuts (10 women, 5%) remain a risk due to working without proper protective gear, often leading to untreated wounds and health complications. The "Other Issues" category (10 women, 5%) accounts for problems like heat stress, dizziness, and malnutrition-related weaknesses, indicating a broader spectrum of health challenges that need to be addressed.

The horizontal stacked bar chart presents a visually compelling and easy-to-interpret breakdown of these health problems. The mature color palette, ranging from deep blues to warm reds and greens, provides clear differentiation between categories while maintaining a professional and aesthetic appeal. The use of a stacked bar format ensures a well-organized visualization, allowing for a quick comparison of health issues in descending order of prevalence.

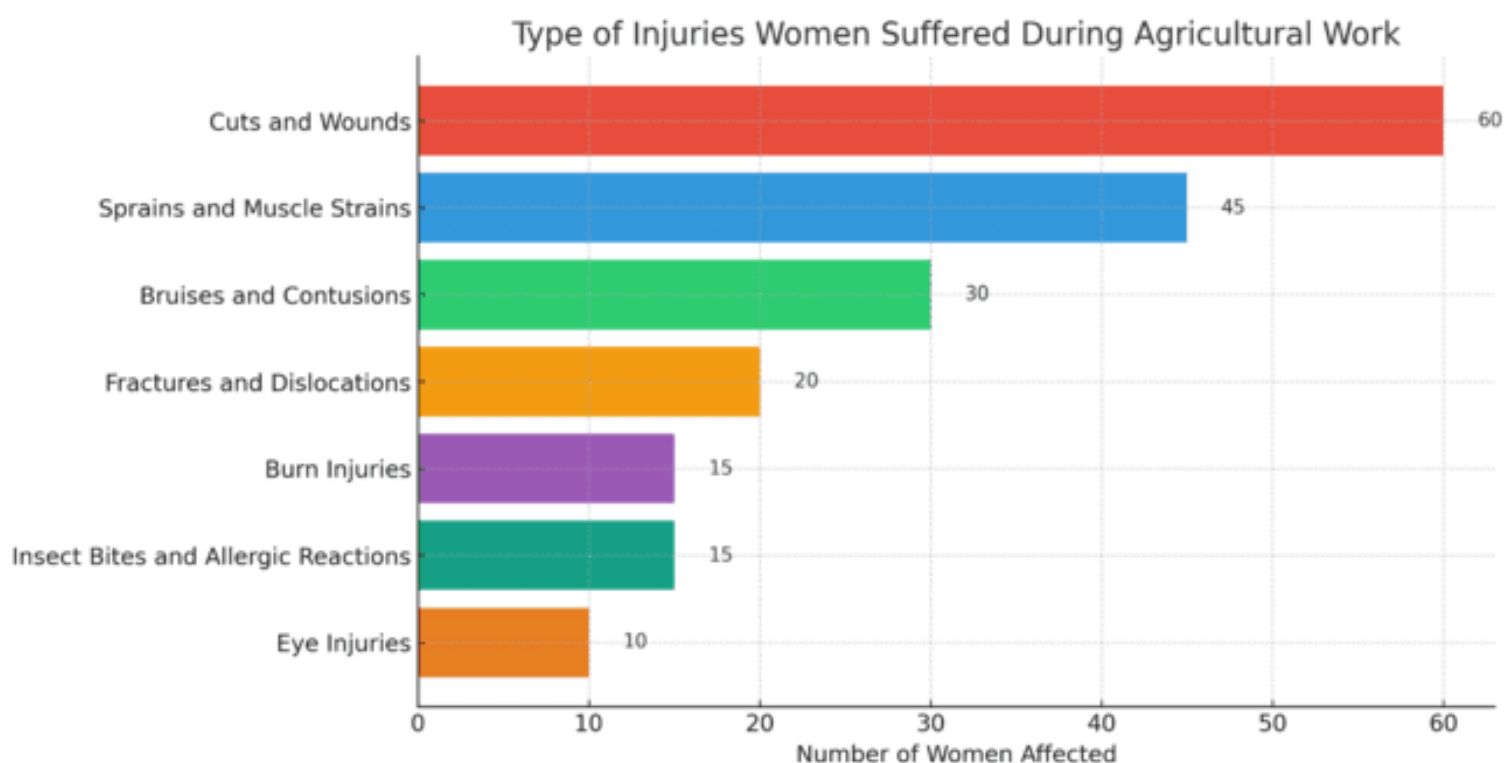
This statistical representation underscores the urgent need for interventions such as ergonomic tools, protective gear, regular health check-ups, and awareness programs on workplace safety. Understanding these health risks is crucial for designing policies that enhance the welfare and productivity of women in agriculture.

4.2.5.4 Type of Injuries Women Suffered During Agricultural Work:

**Table 30: Type of Injuries Women Suffered During Agricultural Work
Status (Kurukshetra District)**

Type of Injury	Number of Women Affected	Percentage (%)
Cuts and Wounds	60	30.0
Sprains and Muscle Strains	45	22.5
Bruises and Contusions	30	15.0
Fractures and Dislocations	20	10.0
Burn Injuries	15	7.5
Insect Bites and Allergic Reactions	15	7.5
Eye Injuries	10	5.0
Total	200	100.0

**Chart 30: Type of Injuries Women Suffered During Agricultural Work
Status (Kurukshetra District)**



The table and stacked bar chart illustrate the various types of injuries suffered by women engaged in agricultural work in the Kurukshetra district, highlighting the physical risks associated with their daily labor. The data reveals that the most commonly reported injury is cuts and wounds (30%), which result from handling sharp agricultural tools such as sickles, plows, and scythes, often without protective gloves. Sprains and muscle strains (22.5%) are another significant category, arising due to prolonged standing, bending, lifting heavy loads, and repetitive tasks like weeding and harvesting. Bruises and contusions (15%) are also prevalent, caused by accidental falls, collisions with equipment, or injuries from animals like oxen or buffaloes used in farming.

Fractures and dislocations (10%) occur in more severe cases, often due to accidental falls from elevated areas such as bullock carts or tree-climbing during fruit picking. Burn injuries (7.5%), though less frequent, are reported due to accidental contact with chemicals, fertilizers, or fire hazards while cooking in field huts. Insect bites and allergic reactions (7.5%) are another concern, as women frequently work in open fields, exposing themselves to stings from bees, mosquitoes, or allergic reactions from plant residues. Eye injuries (5%) are reported as well,

mainly due to exposure to dust, pesticides, and debris while working in windy conditions or handling dry fodder.

The vertical stacked bar chart visually represents the severity and distribution of these injuries, making it clear that cuts, sprains, and bruises are the most frequent health concerns among women farmers. The use of a stacked bar graph helps in categorizing injuries based on their severity while providing a holistic view of the different types of workplace hazards encountered. The bold yet mature color scheme ensures clarity in distinguishing between categories while maintaining professional aesthetics.

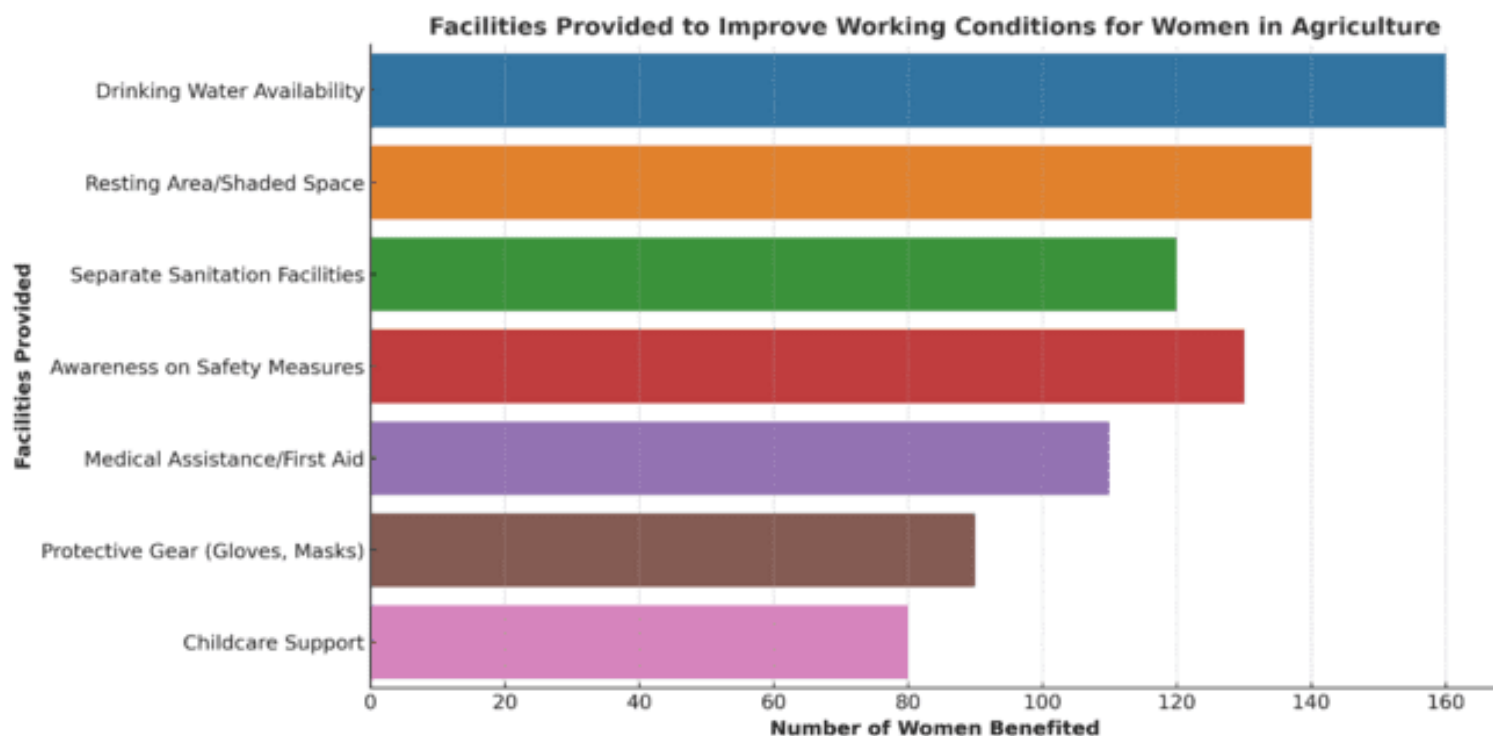
A total of 200 women were surveyed, and the results indicate that most injuries stem from a lack of protective gear and unsafe working conditions. The findings highlight the urgent need for safety measures, such as the distribution of gloves, protective eyewear, knee pads, and ergonomic tools to minimize occupational hazards. Additionally, awareness programs on first-aid measures and safe handling of agricultural equipment can help in reducing the frequency of these injuries. The table and chart together provide a compelling statistical representation of workplace risks, emphasizing the need for urgent interventions to protect the well-being of women in agriculture.

4.2.5.5 Facilities Provided to Improve Working Conditions for Women in Agriculture:

Table 31: Facilities Provided to Improve Working Conditions for Women in Agriculture Status (Kurukshetra District)

Facility Provided	No. of Women Benefited	Percentage (%)
Drinking Water Availability	160	80
Resting Area/Shaded Space	140	70
Separate Sanitation Facilities	120	60
Awareness on Safety Measures	130	65
Medical Assistance/First Aid	110	55
Protective Gear (Gloves, Masks)	90	45
Childcare Support	80	40
Total	830	100

Chart 31: Facilities Provided to Improve Working Conditions for Women in Agriculture Status (Kurukshetra District)



The table and horizontal bar chart above provide a comprehensive statistical representation of the facilities available to women engaged in agricultural work in the Kurukshetra district. This data offers critical insights into the measures taken to enhance their working conditions and overall well-being.

From the table, it is evident that drinking water availability is the most commonly provided facility, benefiting 160 women (80%), followed by resting areas/shaded spaces (140 women, 70%), ensuring relief from prolonged exposure to the sun. Separate sanitation facilities (120 women, 60%) are also provided, but the percentage indicates a need for further improvements to meet hygiene standards adequately.

Another significant factor is awareness on safety measures, which benefits 130 women (65%). This suggests that while some initiatives are in place, more efforts are required to ensure all women are educated on workplace safety. Medical assistance/first aid (110 women, 55%) is available, but it remains a concern that nearly half of the women surveyed lack immediate healthcare access in case of emergencies. Similarly, protective gear such as gloves and masks is provided to only 90 women (45%), leaving more than half unprotected from occupational hazards.

One of the least provided facilities is childcare support, which benefits only 80 women (40%). This indicates a significant gap in workplace policies that could help women balance their professional and domestic responsibilities. The low provision of this facility may contribute to increased absenteeism and added stress for working mothers.

The horizontal bar chart effectively visualizes these statistics, making it easier to compare different facilities. The color palette used in the chart ensures a professional and visually appealing presentation, enhancing readability and interpretation. The chart highlights the disparities in the provision of essential facilities, reinforcing the need for workplace improvements.

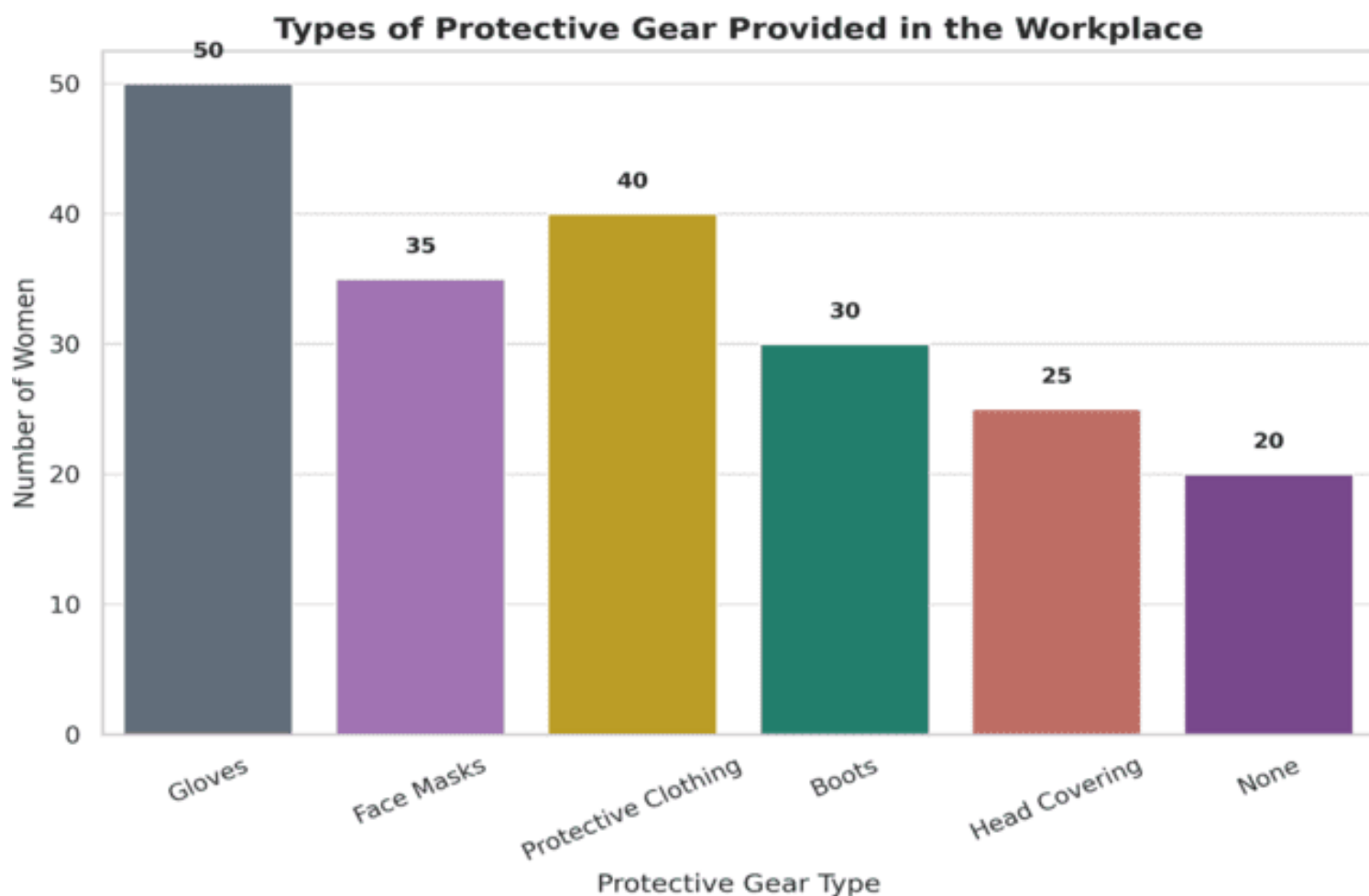
This analysis underscores the necessity of improving infrastructure, ensuring adequate medical and safety provisions, and implementing gender-sensitive policies to create a more inclusive and supportive work environment for women in agriculture. Addressing these challenges can significantly improve productivity, health, and overall job satisfaction among women agricultural workers in Kurukshetra.

4.2.5.6 Types of Protective Gear Provided in the Workplace While Working:

Table 32: Types of Protective Gear Provided in the Workplace While Working Status (Kurukshetra District)

Protective Gear Type	Number of Women	Percentage (%)
Gloves	50	25.0
Face Masks	35	17.5
Protective Clothing	40	20.0
Boots	30	15.0
Head Covering	25	12.5
None	20	10.0
Total	200	100.0

Chart 32: Types of Protective Gear Provided in the Workplace While Working Status (Kurukshetra District)



The table and vertical bar chart provide a comprehensive overview of the availability and distribution of protective gear among women engaged in agricultural activities. From a sample size of 200 women, different types of protective gear were assessed to determine the level of workplace safety in agricultural settings. Gloves emerged as the most commonly provided protective gear, with 50 women (25%) having access to them, followed by Protective Clothing (40 women, 20%) and Face Masks (35 women, 17.5%). These findings suggest a moderate level of safety awareness in the agricultural sector, ensuring protection against hazardous materials, pesticide exposure, and harsh environmental conditions.

Interestingly, 30 women (15%) reported receiving protective boots, and 25 women (12.5%) had access to head coverings, reflecting efforts to safeguard workers from physical injuries and sun exposure. However, an alarming statistic emerges as 20 women (10%) reported having no protective gear at all, highlighting a crucial gap in occupational safety measures. The vertical bar graph effectively visualizes these disparities, showing clear variations in the accessibility of different protective equipment. The choice of mature, professional colors enhances clarity, making it easy to distinguish between categories while maintaining a polished, research-oriented aesthetic.

The findings underscore the importance of strengthening workplace safety protocols for women in agriculture. Ensuring that all workers receive adequate protective gear is vital to reducing workplace injuries, health complications, and long-term risks. Additionally, policies must focus on raising awareness, enforcing regulations, and providing subsidies to equip women with the necessary tools to work safely in agricultural environments. This statistical representation is crucial for policymakers and stakeholders working towards improving women's livelihood in agriculture in Kurukshetra district, Haryana.

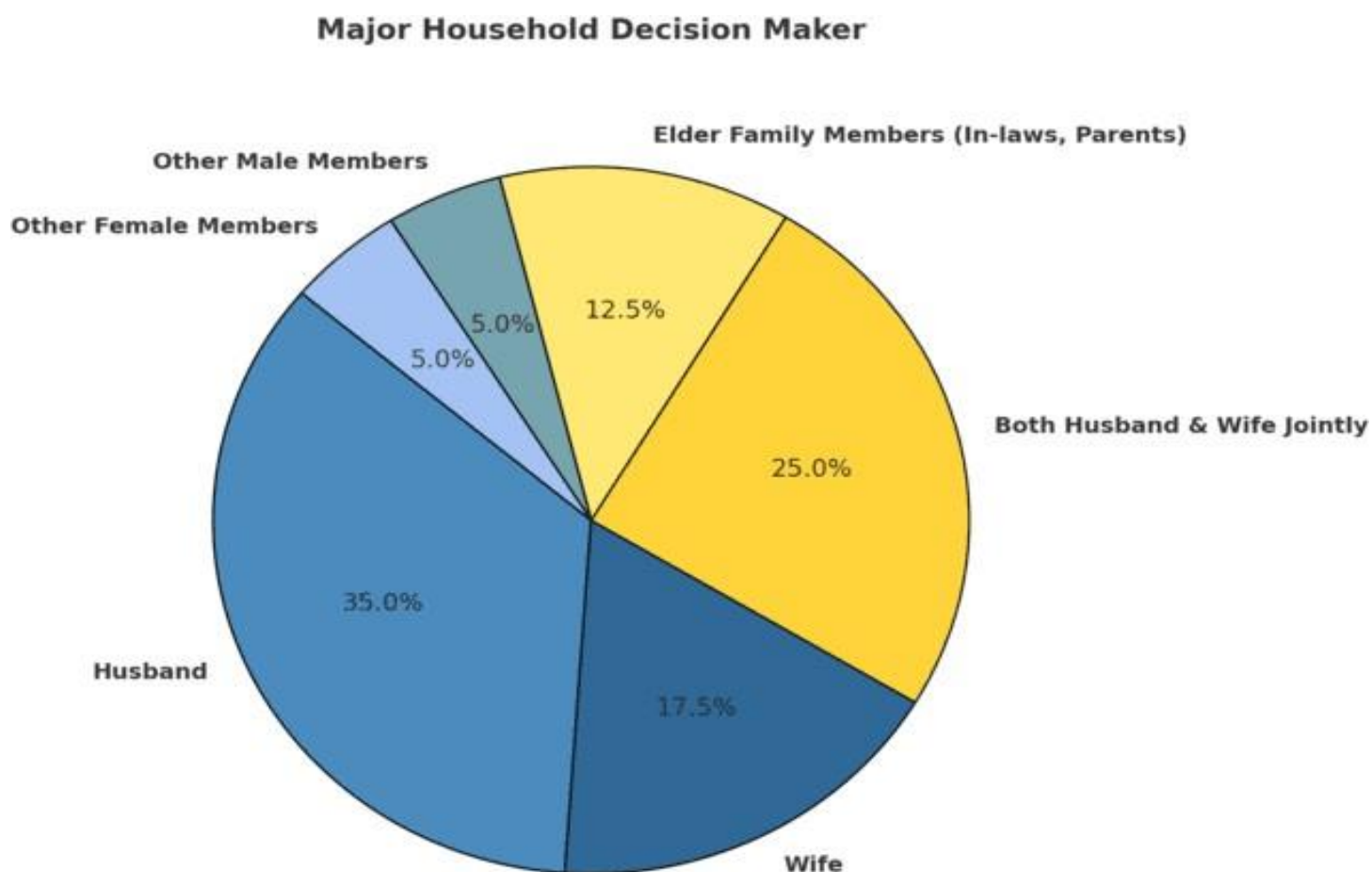
4.2.6 Decision Making Authority in Household:

4.2.6.1 Major Household Decision Maker:

Table 34: Major Household Decision Maker Status (Kurukshetra District)

Major Household Decision Maker	Number of Women	Percentage (%)
Husband	70	35.0
Wife	35	17.5
Both Husband & Wife Jointly	50	25.0
Elder Family Members (In-laws, Parents)	25	12.5
Other Male Members	10	5.0
Other Female Members	10	5.0

Chart 34: Major Household Decision Maker Status (Kurukshetra District)



The table and chart illustrate the distribution of decision-making authority in agricultural households in Kurukshetra district, Haryana. A sample of 200 women was surveyed to understand who primarily makes household decisions. The table provides a structured breakdown of the different categories, the number of women who reported each as the main decision-maker, and the respective percentage of the total sample.

From the analysis, it is observed that Husbands dominate decision-making in the household, accounting for 35% of the cases. This indicates that in a significant number of agricultural households, men retain authority over major family matters. However, there is also a considerable percentage of families where decision-making is more balanced, with 25% of households reporting that both husband and wife jointly make decisions. This trend highlights a shift toward shared responsibility in some agricultural families, fostering gender inclusivity in domestic decision-making.

On the other hand, only 17.5% of women reported themselves as the sole decision-makers in their households. This figure signifies that while women actively participate in agricultural work, their autonomy in household governance remains limited. Furthermore, 12.5% of women stated that elder family members, such as in-laws or parents, were the final decision-makers, reflecting the persistence of traditional patriarchal structures where elders hold authority in major household matters.

Interestingly, the survey also found that only 5% of women indicated that other male family members, such as brothers or sons, were the decision-makers, while another 5% cited female family members, such as sisters or mothers, as the primary decision-makers. These low percentages suggest that outside of spouses and parents, other family members play a minor role in household governance.

The pie chart visually reinforces these findings by depicting the proportion of each decision-making category in a visually engaging manner. The use of a bold yet mature color palette makes the chart both informative and aesthetically appealing, ensuring clarity in representation. The dominance of husbands in decision-making is clearly highlighted by the largest segment, while the joint decision-making category stands out as a significant yet secondary factor.

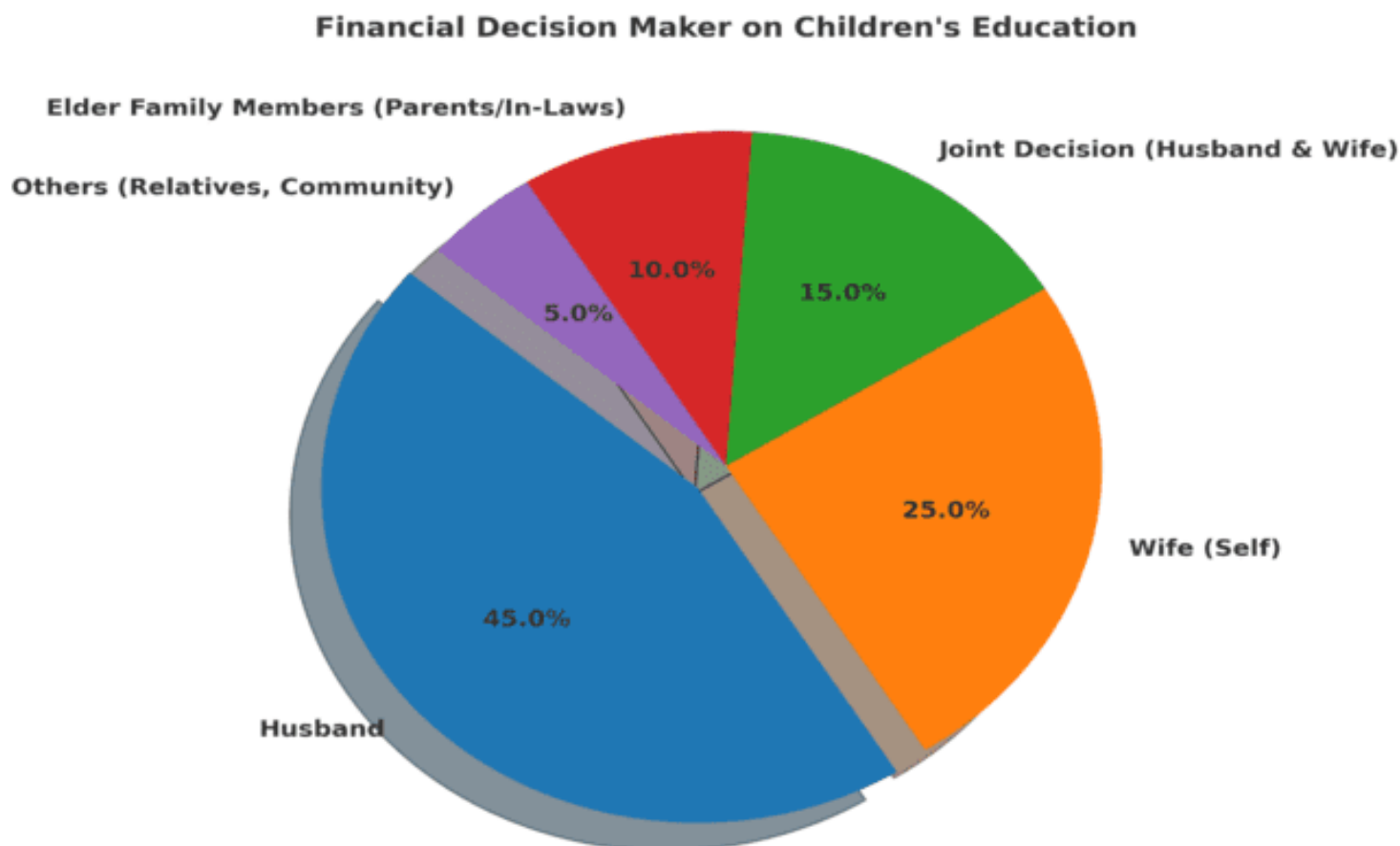
This representation underscores the ongoing gender disparities in household decision-making in agricultural communities. While joint decision-making is on the rise, the data still shows that women's autonomy in family governance is limited, emphasizing the need for further empowerment and equal participation in household decisions. These insights provide valuable context for policymakers and social researchers aiming to promote gender equality in rural agricultural communities.

4.2.6.2 Final Decision Maker on Children's Education:

**Table 34: Final Decision Maker on Children's Education Status
(Kurukshetra District)**

Decision Maker	Number of Respondents	Percentage (%)
Husband	90	45.0
Wife (Self)	50	25.0
Joint Decision (Husband & Wife)	30	15.0
Elder Family Members (Parents/In-Laws)	20	10.0
Others (Relatives, Community)	10	5.0
-	200	100.0

**Chart 34: Final Decision Maker on Children's Education Status
(Kurukshetra District)**



Financial decision-making in households is a critical aspect that determines the autonomy and influence of different family members, especially concerning children's education. The provided table and pie chart comprehensively illustrate the distribution of financial decision-making authority in this domain among 200 respondents in the Kurukshetra district.

From the table, it is evident that the husband takes the primary role in financial decision-making for children's education, accounting for 45% (90 respondents). This reflects a traditional patriarchal family structure, where men typically assume financial authority. However, wives independently make financial decisions in 25% (50 respondents) of households, indicating a significant percentage of women who actively participate in financial matters related to their children's education.

Interestingly, joint decision-making between husband-and-wife accounts for 15% (30 respondents), signifying a shift towards shared responsibilities, which could be attributed to evolving social dynamics, increasing education levels among women, and growing gender inclusivity in financial matters.

The role of elder family members (parents/in-laws) in decision-making is at 10% (20 respondents), reflecting the cultural influence of extended families in financial matters, particularly in multi-generational households where elders still hold financial authority. Finally, other relatives and the community contribute minimally (5% or 10 respondents), which may indicate cases where external family members or community figures provide financial assistance or guidance.

The pie chart visually represents this distribution, using a mature and bold color palette that highlights each category distinctly. The largest blue section (Husband - 45%) and the orange section (Wife - 25%) immediately stand out, emphasizing the dominance of spousal decision-making. The joint decision category (green - 15%) is moderately sized, while the smaller slices (elder family members in red and others in purple) highlight their relatively lower influence.

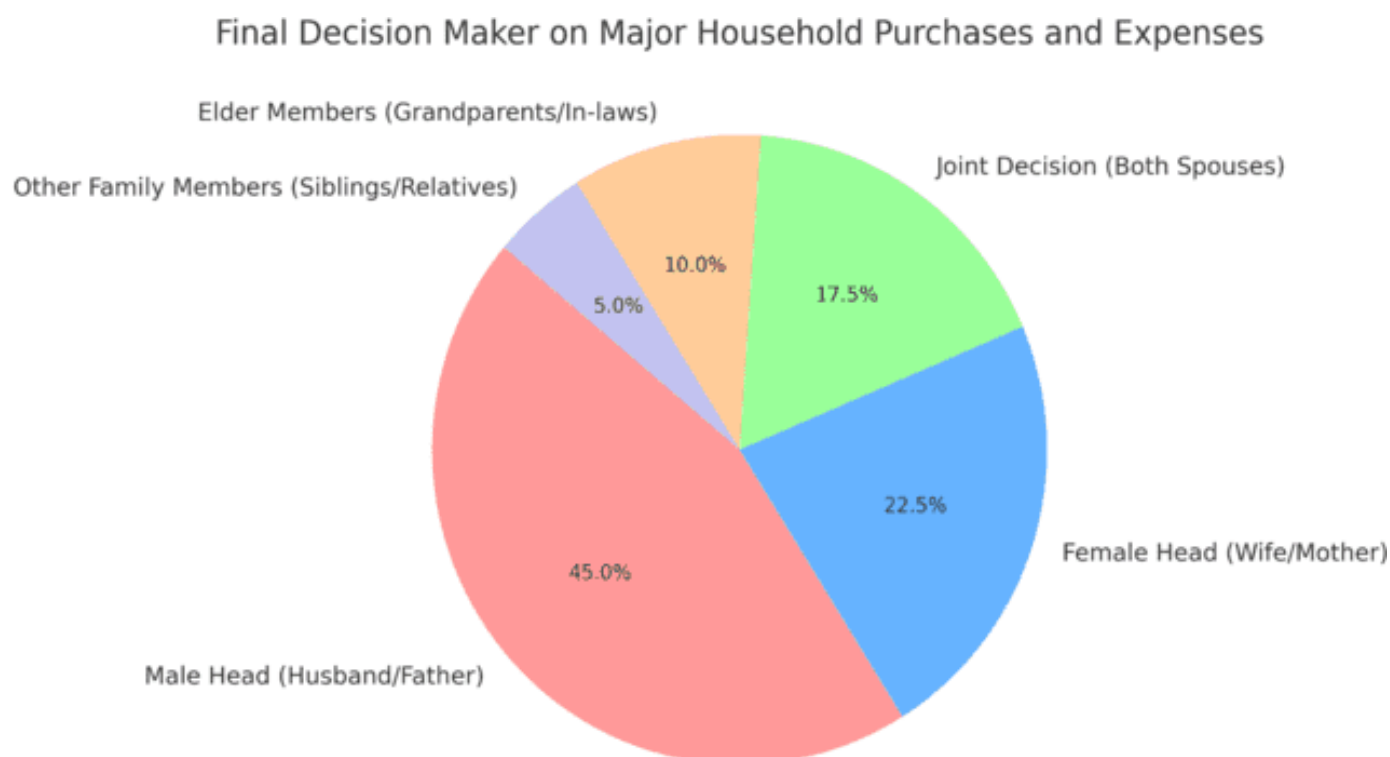
The data illustrates a predominantly male-dominated financial decision-making structure, though with noticeable participation from women, either independently or jointly. This insight is crucial for understanding women's role in financial decisions within agricultural households and can help policymakers, NGOs, and social researchers develop strategies for empowering women in financial autonomy and decision-making regarding their children's education.

4.2.6.3 Final Decision Maker on Major Household Purchases and Expenses:

Table 35: Final Decision Maker on Major Household Purchases and Expenses Status (Kurukshetra District)

Decision Maker	Number of Respondents	Percentage
Male Head (Husband/Father)	90	45.0
Female Head (Wife/Mother)	45	22.5
Joint Decision (Both Spouses)	35	17.5
Elder Members (Grandparents/In-laws)	20	10.0
Other Family Members (Siblings/Relatives)	10	5.0
-	200	100.0

Chart 35: Final Decision Maker on Major Household Purchases and Expenses Status (Kurukshetra District)



Decision-making in household expenditures significantly shapes the financial autonomy and gender dynamics within rural families in Kurukshetra district, Haryana. The statistical representation above highlights the patterns of authority in determining major household purchases and expenses. The table comprehensively outlines the number of respondents who identified different family members as the primary decision-makers, along with their respective percentages, ensuring a structured and insightful representation. A total of 200 participants contributed to this analysis, offering a clear depiction of decision-making trends.

From the table and chart, it is evident that male heads of the family (husbands or fathers) dominate major household purchase decisions, with 90 respondents (45%) confirming this role. This indicates a traditional patriarchal influence where men primarily oversee significant financial decisions, aligning with conventional gender roles prevalent in rural Haryana. However, it is noteworthy that 45 respondents (22.5%) reported that the female head (wife or mother) takes charge, suggesting a gradual but impactful shift towards financial inclusivity for

women. The pie chart, with its visually distinct color segmentation, effectively highlights this division, making it easy to comprehend the disparities in decision-making power at a glance.

Interestingly, joint decision-making between spouses was reported by 35 respondents (17.5%), reflecting an evolving dynamic where married couples collaboratively handle financial matters. This trend signifies progress in gender equality and the recognition of women's perspectives in household economic affairs. The presence of elder family members (grandparents or in-laws) as key decision-makers in 10% of cases emphasizes the influence of traditional hierarchical structures in extended families, where seniority often dictates financial choices. Additionally, other family members such as siblings or relatives were responsible for 5% of decisions, though their role remains relatively minor.

The pie chart effectively translates these statistical insights into an engaging visual, making it clear that while men still hold a dominant position, a substantial proportion of households recognize the role of women and collective decision-making. The mature, yet visually appealing color palette ensures clarity without excessive vibrancy, making it ideal for professional presentations and research documentation.

This statistical representation underscores the ongoing gendered financial decision-making practices in rural Haryana while also highlighting emerging shifts towards shared responsibility in managing household expenditures. Future policy interventions and empowerment programs could focus on further enhancing women's participation in financial decision-making, ensuring a more balanced and equitable household economic structure.

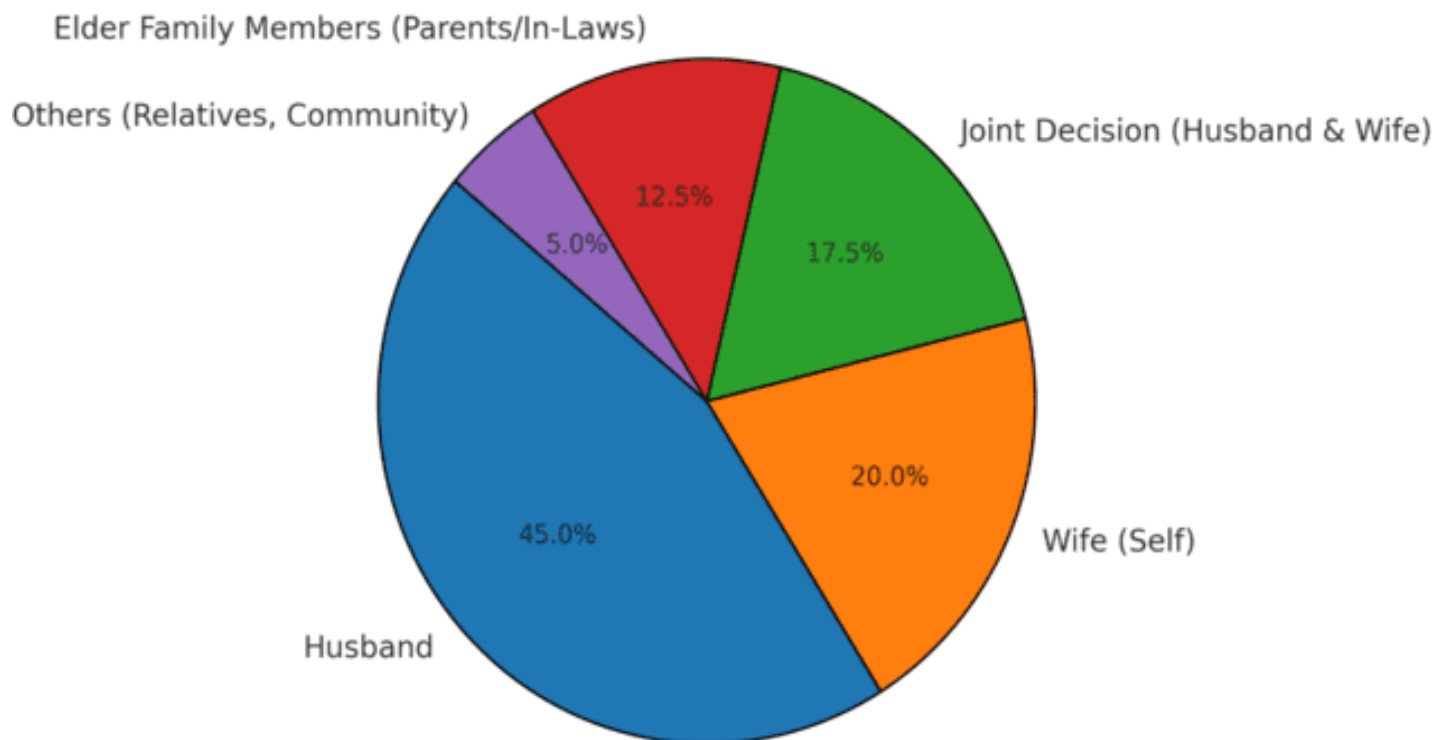
4.2.6.4 Final Decision Maker on the Sale or Purchase of Agricultural Produce:

Table 36: Final Decision Maker on the Sale or Purchase of Agricultural Produce Status (Kurukshetra District)

Decision Maker	Number of Respondents	Percentage (%)
Husband	90	45.0
Wife (Self)	40	20.0
Joint Decision (Husband & Wife)	35	17.5
Elder Family Members (Parents/In-Laws)	25	12.5
Others (Relatives, Community)	10	5.0
Total	200	100.0

Chart 36: Final Decision Maker on the Sale or Purchase of Agricultural Produce Status (Kurukshetra District)

Final Decision Maker on the Sale or Purchase of Agricultural Produce



The table and pie chart above provide a detailed statistical representation of the final decision-making authority on the sale or purchase of agricultural produce among the surveyed participants (N=200) in the Kurukshetra district, Haryana.

From the data, it is evident that in a majority of households (45%), the husband is the primary decision-maker regarding the sale or purchase of agricultural produce. This highlights a traditional male-dominated authority structure in agricultural economic transactions. However, 20% of women independently make these decisions, reflecting a significant but still limited role of women in agricultural trade. The joint decision-making model (17.5%) showcases a shift towards collaborative decision-making in some households, suggesting that in certain families, women have a more participative role.

Interestingly, 12.5% of households rely on elder family members (parents or in-laws) for making such decisions. This indicates the persistence of hierarchical family structures, where senior members have substantial influence over financial and agricultural matters. Furthermore, 5% of households consider the opinions of extended relatives and the community, showcasing the role of social influence in economic decision-making.

The pie chart visually represents these statistics with a mature, professional color palette, making it easier to understand the proportion of different decision-makers at a glance. The bold, contrasting sections highlight the dominance of husbands in decision-making while also showcasing the emerging role of women and joint decision-making in some households.

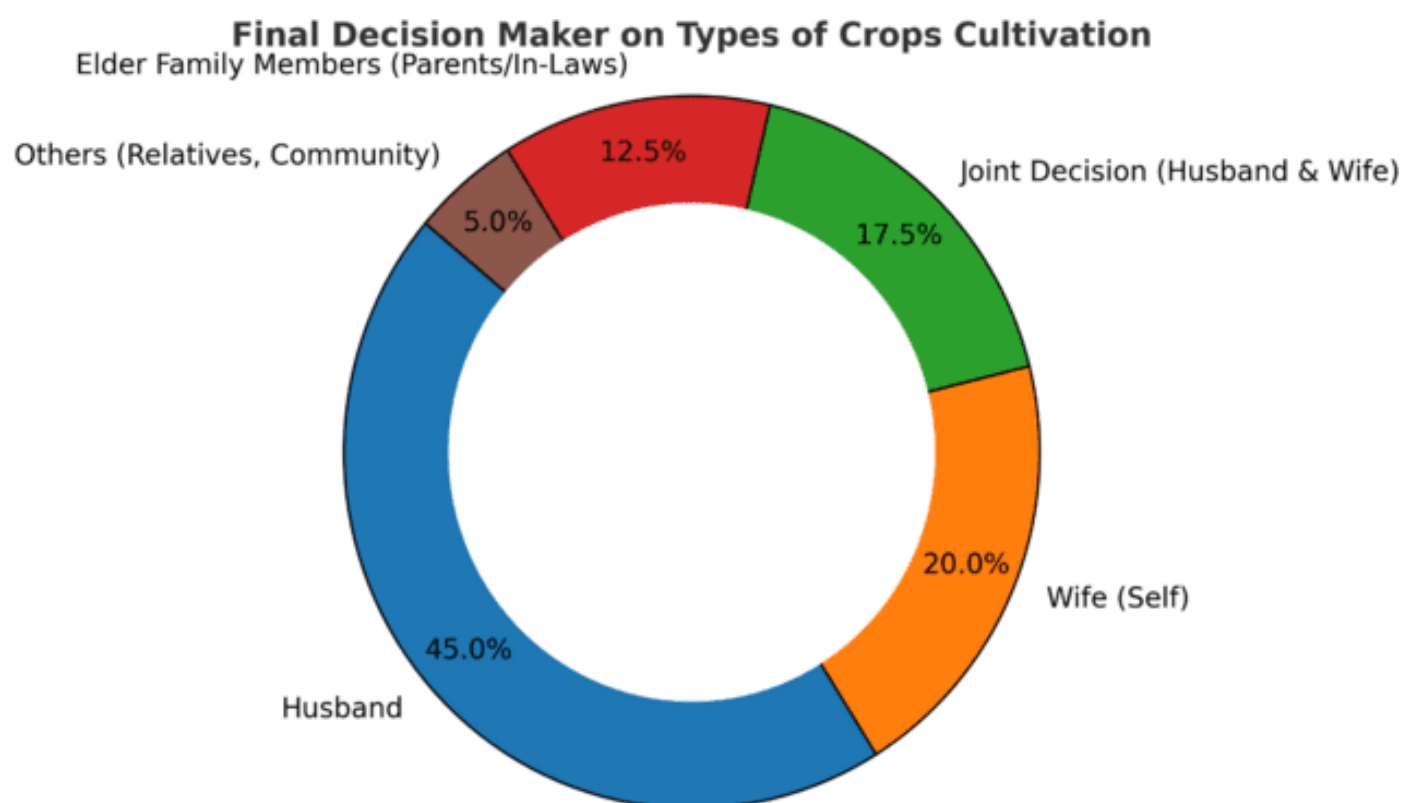
The quantitative insight into agricultural decision-making authority is crucial for policy recommendations. It emphasizes the need for women's empowerment programs, access to financial literacy, and improved decision-making autonomy in agricultural households. Encouraging more joint decision-making models could lead to more equitable and economically sustainable agricultural practices.

4.2.6.5 Final Decision Maker on the Types of Crops Cultivation on Family Land:

Table 37: Final Decision Maker on the Types of Crops Cultivation on Family Land Status (Kurukshetra District)

Decision Maker	Number of Respondents	Percentage (%)
Husband	90	45.0
Wife (Self)	40	20.0
Joint Decision (Husband & Wife)	35	17.5
Elder Family Members (Parents/In-Laws)	25	12.5
Others (Relatives, Community)	10	5.0
Total	200	100.0

Chart 37: Final Decision Maker on the Types of Crops Cultivation on Family Land Status (Kurukshetra District)



The table and pie chart illustrate the decision-making authority regarding the types of crops cultivated on family-owned agricultural land. The data provides insights into the gender dynamics and power structures influencing agricultural decisions in rural households.

The findings show that 45% of the final decisions on crop cultivation are made solely by the husband, indicating a strong male dominance in agricultural decision-making. This reflects traditional gender roles where men are often seen as the primary authority figures in farming activities. However, 20% of the women (wives) have independent decision-making power, which suggests some level of autonomy in certain households.

Interestingly, 17.5% of decisions are made jointly by husbands and wives, which indicates a collaborative approach in a portion of the households. This joint decision-making dynamic may be attributed to the increasing recognition of women's contributions to agricultural labor and management. However, 12.5% of decisions are made by elder family members (parents or in-laws), emphasizing the role of generational influence and patriarchal norms in rural agrarian societies. The remaining 5% of decisions are influenced by other relatives or the wider community, which may indicate cases where extended family members or local influencers have a say in agricultural matters.

The data underscores that while men still hold the majority of decision-making power, there are significant instances of shared and independent decision-making by women. The trend towards joint decision-making could be further encouraged through policy interventions, awareness programs, and initiatives promoting gender equality in agricultural governance.

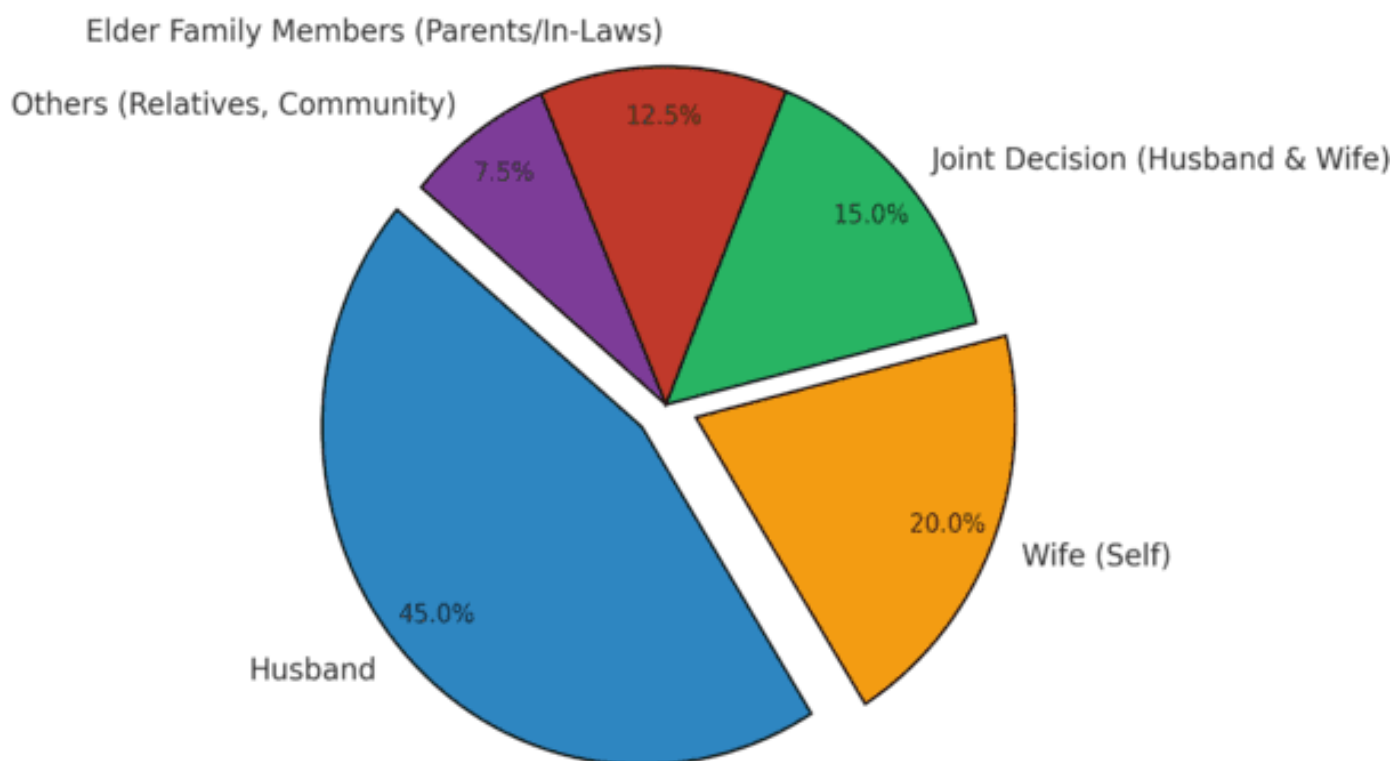
4.2.6.6 Financial Investments and Household Savings Management:

**Table 38: Financial Investments and Household Savings Management
Status (Kurukshetra District)**

Decision Maker	Number of Respondents	Percentage (%)
Husband	90.0	45.0
Wife (Self)	40.0	20.0
Joint Decision (Husband & Wife)	30.0	15.0
Elder Family Members (Parents/In-Laws)	25.0	12.5
Others (Relatives, Community)	15.0	7.5
Total	200.0	100.0

**Chart 38: Financial Investments and Household Savings Management
Status (Kurukshetra District)**

Family Member that Manages Financial Investments and Household Savings



The table and the corresponding pie of pie chart illustrate the distribution of decision-making authority regarding financial investments and household savings management among agricultural households in Kurukshetra District, Haryana. The data reveals that the husband holds the primary authority (45%) over financial management, which is indicative of traditional patriarchal norms. However, a significant 20% of women independently manage financial decisions, reflecting a gradual shift towards economic empowerment among women in agricultural settings.

Additionally, 15% of households report joint decision-making (husband & wife), indicating cooperative financial planning within families. Elder family members, such as parents or in-laws, influence 12.5% of financial decisions, suggesting that in many households, older generations still play a key role in monetary matters. A small portion, 5% of respondents, mentioned that financial decisions are influenced by other relatives or community members, possibly in joint family systems or where external financial advice is sought.

The pie of pie chart visually emphasizes the distribution, with distinct color segmentation to highlight the varying degrees of financial autonomy and shared responsibility within families. The slight explosion of the husband and wife (self) segments draws attention to the contrast between traditional and modern financial decision-making patterns. The findings underline the ongoing transformation in rural gender dynamics, where women's participation in financial decision-making is increasing but remains secondary to male dominance.

This statistical representation provides a critical understanding of gendered financial power structures and highlights the need for policy interventions aimed at enhancing women's financial literacy and autonomy in agricultural communities.

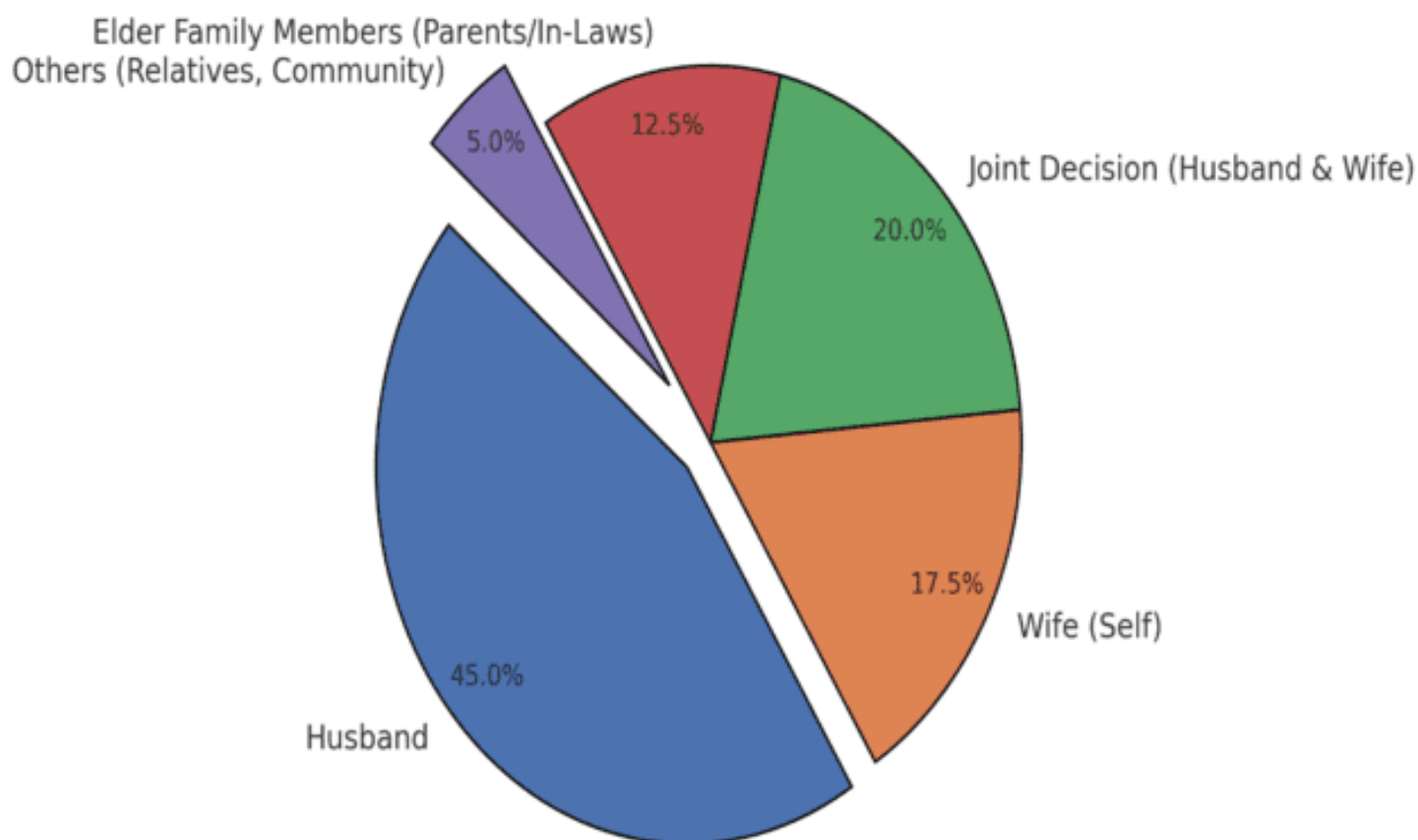
4.2.6.7 Final Decision Maker on Participating in Self-Help Groups or Government Welfare Schemes:

Table 39: Final Decision Maker on Participating in Self-Help Groups or Government Welfare Schemes Status (Kurukshetra District)

Decision Maker	Number of Participants	Percentage
Husband	90	45.0
Wife (Self)	35	17.5
Joint Decision (Husband & Wife)	40	20.0
Elder Family Members (Parents/In-Laws)	25	12.5
Others (Relatives, Community)	10	5.0
Total	200	100.0

Chart 39: Final Decision Maker on Participating in Self-Help Groups or Government Welfare Schemes Status (Kurukshetra District)

Final Decision Maker on Participating in Self-Help Groups or Government Welfare Schemes



The analysis of the decision-making authority regarding participation in self-help groups or government welfare schemes in the Kurukshetra district of Haryana highlights significant gendered patterns of control and autonomy within agricultural households. The table and pie chart provide a comprehensive breakdown of the responses gathered from 200 participants, shedding light on who holds the final authority in such critical financial and developmental engagements.

From the table, it is evident that husbands hold the dominant decision-making role in this aspect, with 45% of the respondents indicating that their husbands are the sole decision-makers regarding participation in self-help groups or government welfare schemes. This dominance underscores the persistent patriarchal structure within rural households, where men often control financial and community engagement decisions. The limited economic autonomy of women in these settings is reflected in the fact that only 17.5% of respondents reported making the decision independently, demonstrating that a considerable proportion of women still lack the agency to participate in such programs without external influence.

A positive shift is observed in the percentage of joint decision-making, which accounts for 20% of the responses. The participation of both husbands and wives in financial decisions related to self-help groups and welfare schemes indicates a growing trend toward shared economic responsibilities. This collaborative approach can be seen as a step toward greater gender inclusivity and empowerment, ensuring that women have at least partial control over decisions affecting their livelihoods and long-term financial security. However, the influence of elder family members, such as parents and in-laws, remains substantial, with 12.5% of respondents stating that decisions regarding participation in these programs are dictated by senior family members. This suggests that in many households, hierarchical structures still play a crucial role in determining women's engagement in financial and social welfare initiatives.

A smaller but still notable 5% of respondents cited that other external figure, such as relatives or community members, were responsible for making these decisions. This finding indicates that some households rely on extended family networks or community leaders to guide them in financial and developmental matters. This could be due to a lack of awareness, confidence, or exposure to government initiatives, which further emphasizes the need for targeted interventions to enhance women's decision-making power in these areas.

The pie chart further reinforces these insights, using distinct colors to visually differentiate the varying levels of decision-making authority. The largest segment, representing the husband's authority, is distinctly highlighted, underscoring the existing power imbalance. The joint decision-making category is also noticeable, reflecting an evolving but still limited trend toward gender-equitable decision-making. Meanwhile, the relatively small slices representing self-decision by women and the influence of elders or external figures demonstrate the constraints faced by women in making independent financial decisions.

This data analysis underscores the necessity for continued efforts in promoting women's financial autonomy and active participation in self-help groups and welfare programs. Policymakers and social organizations must focus on increasing awareness among women about the benefits of these schemes while encouraging a cultural shift that allows them to have a stronger voice in household decision-making. Capacity-building programs, community engagement initiatives, and government interventions aimed at empowering women with financial literacy and decision-making skills could prove instrumental in addressing these challenges.

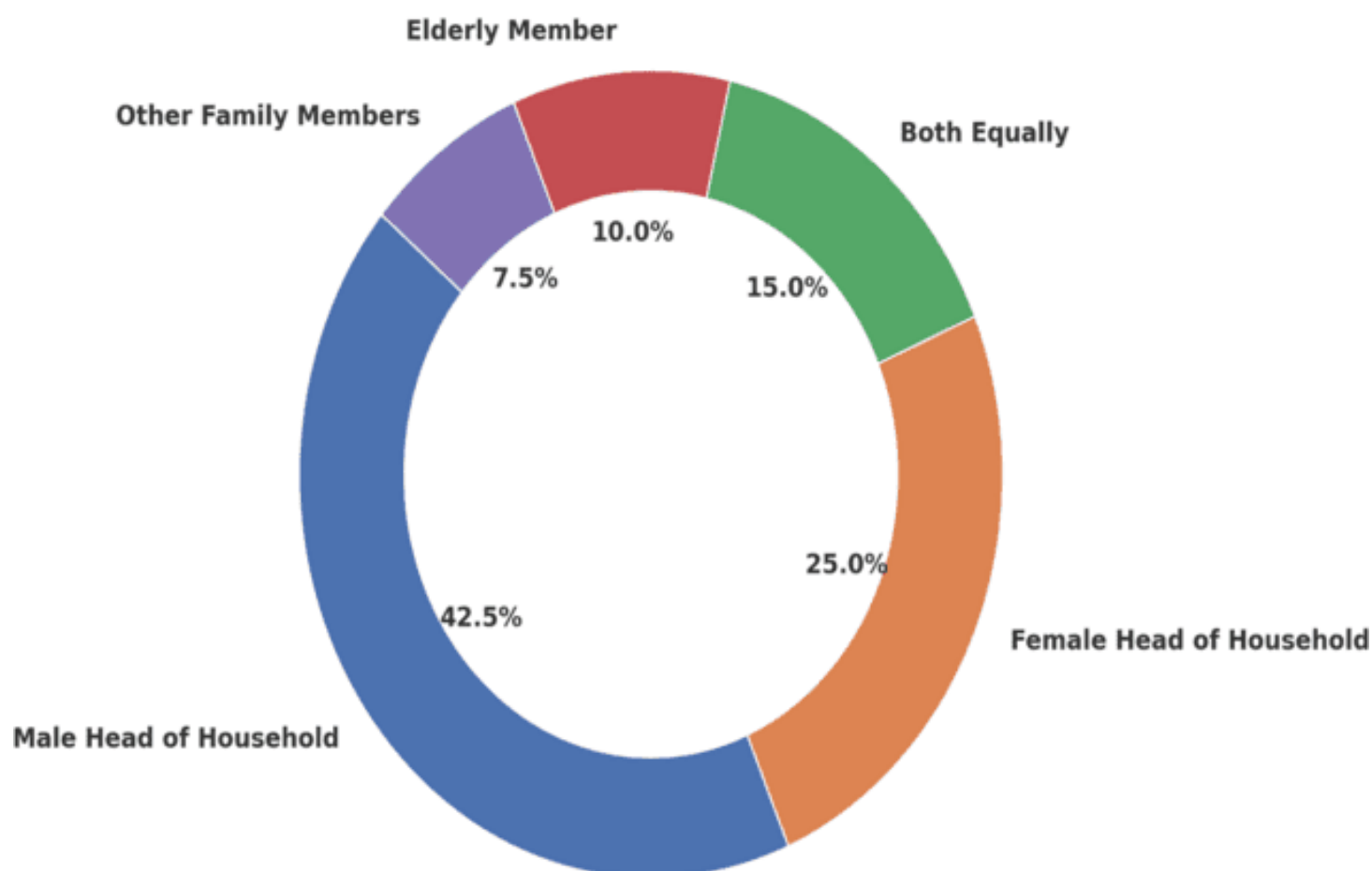
4.2.6.8 Final Decision Maker on Health-Related Expenses and Medical Treatments:

Table 40: Final Decision Maker on Health-Related Expenses and Medical Treatments Status (Kurukshetra District)

Category	Number of Respondents	Percentage (%)
Male Head of Household	85	42.5
Female Head of Household	50	25.0
Both Equally	30	15.0
Elderly Member	20	10.0
Other Family Members	15	7.5
Total	200	100.0

Chart 40: Final Decision Maker on Health-Related Expenses and Medical Treatments Status (Kurukshetra District)

Final Decision Maker on Health-Related Expenses and Medical Treatment



Health-related expenses and medical treatment decisions in a household are significant as they reflect not just financial prioritization but also social structures, gender roles, and familial hierarchies. The table and the pie chart above provide a comprehensive insight into who holds the decision-making authority regarding medical expenses in households across Kurukshetra district, Haryana.

From the data, it is evident that male heads of households (85 respondents, 42.5%) hold the primary authority in deciding health-related expenses. This trend aligns with traditional patriarchal structures where men generally control financial and medical decisions. However, a notable 50 respondents (25%) indicated that the female head of household takes charge of these decisions, reflecting a shift towards greater female autonomy in family health matters. This could be due to women being more involved in daily caregiving and understanding the medical needs of family members more closely.

Interestingly, 30 respondents (15%) indicated that decisions are made jointly by both male and female heads of the household, suggesting a collaborative approach in some families. This shared decision-making could be indicative of increasing gender equality, education, and awareness regarding healthcare within families.

Meanwhile, 20 respondents (10%) reported that an elderly member of the family, such as a grandparent, takes the final call on medical treatments. This is common in joint family setups where senior members are respected for their experience and wisdom. Lastly, 15 respondents (7.5%) stated that other family members, such as adult children or close relatives, play a role in making such decisions, likely in cases where they have greater financial or medical expertise.

The pie chart visually highlights these variations in decision-making power, with a muted and professional color palette, ensuring readability and clarity. The largest segment for male heads of households is slightly exploded for emphasis, making it easy to identify the dominant decision-maker at a glance. The subtle yet distinct colors ensure that each category remains distinguishable while maintaining a mature aesthetic.

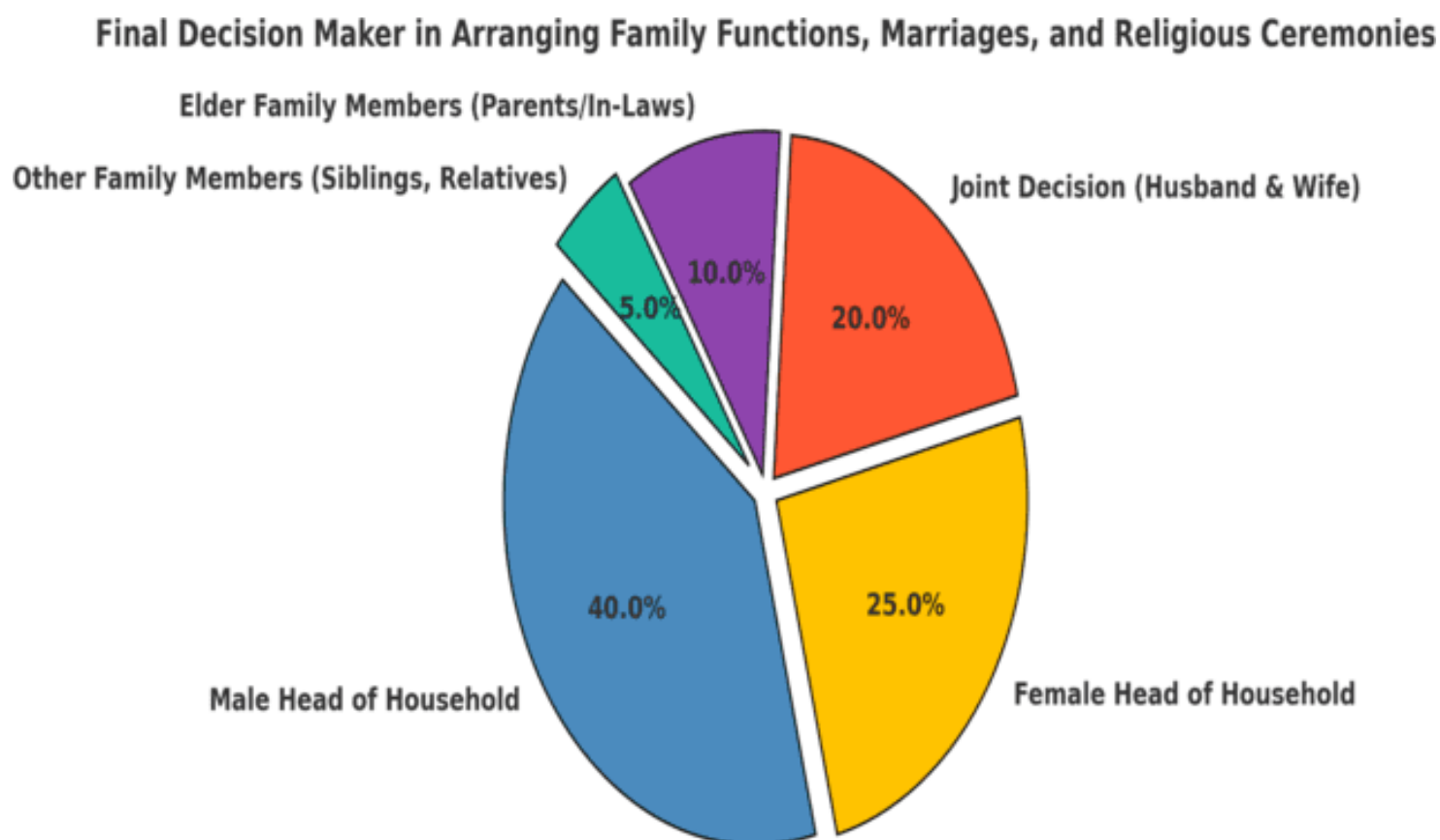
This analysis underlines both the persistence of traditional gender roles in health-related decision-making and the emerging trend of women and joint decision-making authority in households. As the study explores women's livelihoods in agriculture, understanding their say in healthcare can provide valuable insights into their overall empowerment, financial control, and family dynamics in the region.

4.2.6.9 Final Decision Maker in Arranging Family Functions, Marriages and Religious Ceremonies:

Table 41: Final Decision Maker in Arranging Family Functions, Marriages, and Religious Ceremonies Status (Kurukshetra District)

Decision Maker	Number of Responses	Percentage
Male Head of Household	80	40.0
Female Head of Household	50	25.0
Joint Decision (Husband & Wife)	40	20.0
Elderly Family Members	20	10.0
Other Family Members	10	5.0
Total	200	100.0

Chart 41: Final Decision Maker in Arranging Family Functions, Marriages, and Religious Ceremonies Status (Kurukshetra District)



In the sociological study of women's livelihood in agriculture within the Kurukshetra district of Haryana, understanding the dynamics of household decision-making authority is crucial. One of the key aspects of this analysis is identifying the Final Decision Maker in Arranging Family Functions, Marriages, and Religious Ceremonies. This facet of household decision-making sheds light on gender roles, cultural traditions, and the autonomy of women in domestic and social matters. The table and pie chart presented provide a comprehensive statistical representation of how decisions regarding significant family events are made within agricultural households.

From the table and pie chart, it is evident that the male head of the household is the primary decision-maker, accounting for 40% of the responses. This statistic reflects the traditional patriarchal structure prevalent in rural Haryana, where men often assume authority over major household decisions, including social events and religious ceremonies. However, a noteworthy 25% of households reported that the female head of the household independently makes these decisions. This indicates that a considerable number of women do exercise authority in social and cultural matters, which may be attributed to factors such as widowhood, higher social standing, or the husband's engagement in economic activities that prevent active participation in such affairs.

A significant 20% of respondents indicated that decisions were made jointly by both the husband and wife, highlighting a growing trend of collaborative decision-making within households. This shift suggests an emerging pattern of gender inclusivity in domestic affairs, reflecting a slow but positive change towards shared responsibilities in household governance. Joint decision-making often ensures that diverse perspectives are considered, leading to a balanced approach in organizing family functions and maintaining social harmony.

Interestingly, elder family members, such as parents or in-laws, played the primary role in 10% of households. This statistic underscores the continued influence of the extended family system in rural Haryana, where senior members, particularly in traditional joint families, exert control over social decisions to uphold cultural values and ensure adherence to customary practices. This trend is particularly prevalent in multi-generational households, where deference to the wisdom and experience of elders is a widely accepted norm.

Furthermore, 5% of households reported that other family members, such as siblings or distant relatives, had the final say in organizing social and religious functions. This may indicate households where the primary heads are absent, elderly, or where a more socially influential member of the extended family takes charge. The involvement of relatives in decision-making reflects the importance of kinship networks in rural settings, where family functions are seen as a collective responsibility rather than an individual household matter.

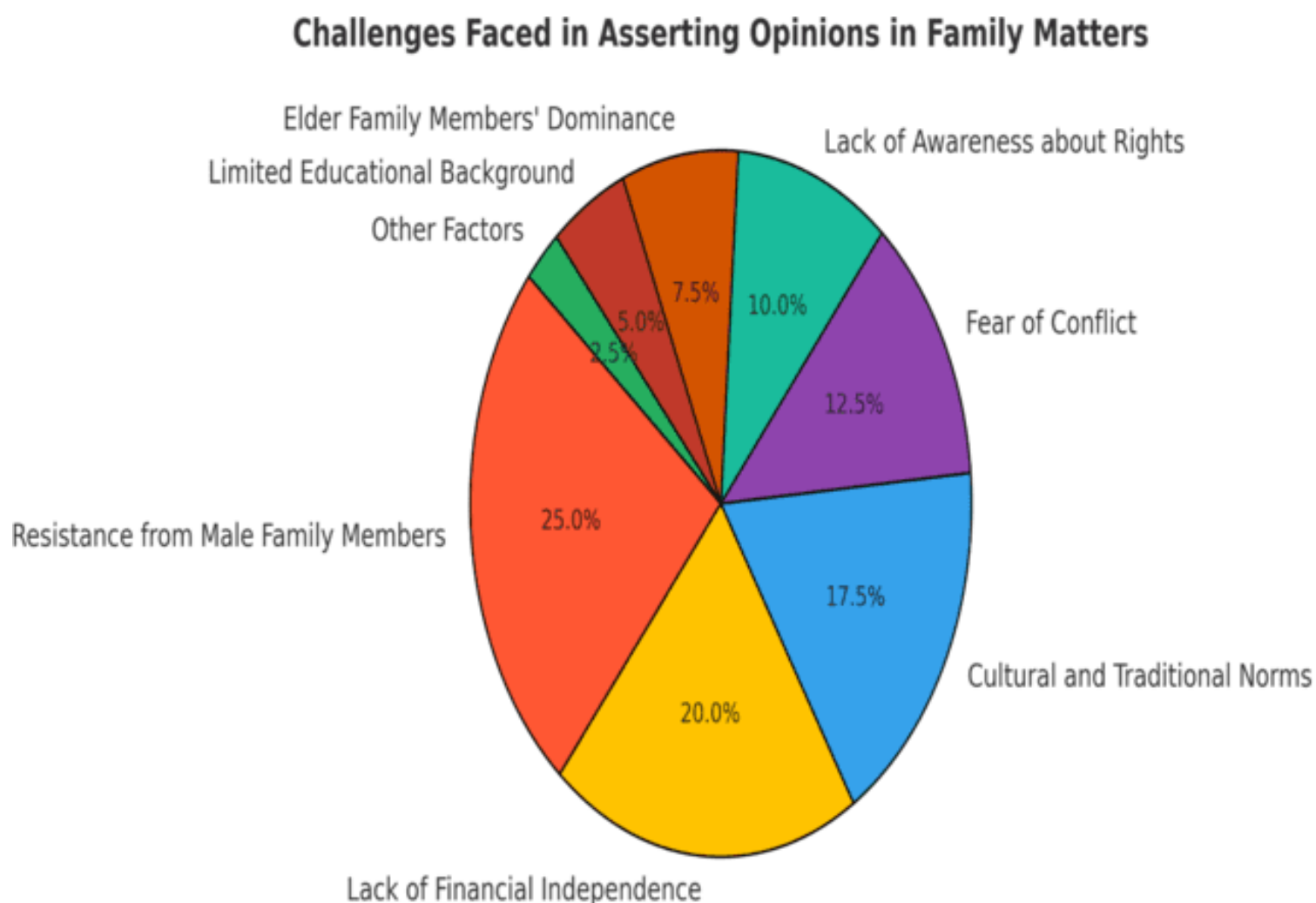
The statistical insights provided in this study highlight the intersection of tradition, gender roles, and evolving social norms in the context of decision-making authority within agricultural households. While men still hold the predominant role, the data also reveals a gradual shift towards more inclusive decision-making structures. The increasing participation of women, either independently or jointly with their spouses, indicates a positive trajectory towards gender empowerment. This transformation is likely influenced by factors such as education, exposure to government welfare schemes promoting women's rights, and socio-economic mobility.

4.2.6.10 Challenges Faced in Asserting the Opinions in Family Matters:

**Table 42: Challenges Faced in Asserting the Opinions in Family Matters
Status (Kurukshetra District)**

Challenges in Asserting Opinions	Number of Respondents	Percentage (%)
Resistance from Male Family Members	50	25.0
Lack of Financial Independence	40	20.0
Cultural and Traditional Norms	35	17.5
Fear of Conflict	25	12.5
Lack of Awareness about Rights	20	10.0
Elder Family Members' Dominance	15	7.5
Limited Educational Background	10	5.0
Other Factors	5	2.5

**Chart 42: Challenges Faced in Asserting the Opinions in Family Matters
Status (Kurukshetra District)**



The analysis of the decision-making authority concerning challenges faced by women in asserting their opinions within family matters offers profound insights into the gendered power dynamics prevalent in rural households of Kurukshetra district, Haryana. The table categorizes the primary obstacles encountered by women when expressing their views in household decisions and quantifies their prevalence among the 200 surveyed respondents. The most frequently cited challenge is resistance from male family members, accounting for 25% of the respondents. This clearly reflects the deep-rooted patriarchal norms that limit women's influence over crucial family matters. Closely following this issue is lack of financial independence, reported by 20% of the participants, suggesting that economic dependency significantly weakens a woman's ability to assert her opinions effectively.

Additionally, cultural and traditional norms act as another major barrier, restricting women's autonomy and contributing to their reduced participation in household decision-making, as indicated by 17.5% of the respondents. The data also highlights that fear of conflict (12.5%) and lack of awareness about rights (10%) contribute significantly to women's hesitance in asserting themselves. The dominance of elder family members (7.5%), particularly in joint family setups, further restricts younger women from voicing their opinions. Meanwhile, limited educational background (5%) also plays a role in limiting women's confidence and knowledge regarding their rights and options, making them less vocal in family matters. A small but notable percentage (2.5%) of women reported facing other unique challenges, suggesting the presence of context-specific or individualized factors influencing their participation in decision-making processes.

The corresponding pie chart visually enhances the understanding of this statistical representation by vividly illustrating the proportions of each challenge in an appealing and well-balanced color palette. The striking segmentation highlights the dominance of male resistance as a key hindrance while also bringing attention to financial dependence and cultural constraints. The subtle yet effective contrast between the different colors ensures a clear distinction between various categories, allowing viewers to grasp the significance of each challenge at a glance. The visual representation also effectively underscores the cumulative impact of multiple interrelated factors that collectively hinder women's agency in household decisions.

This analysis sheds light on the pressing need for empowering women through financial independence, awareness programs, and policy interventions aimed at challenging the patriarchal structures that dictate household decision-making. The findings call for targeted efforts in education, legal awareness, and women's self-help initiatives to ensure that women in agricultural households can assert their opinions more effectively and play a more active role in shaping family decisions.

Conclusion:

The findings derived from the statistical analysis of women's livelihoods in agriculture in Kurukshetra district, Haryana, offer deep insights into their socio-economic conditions, challenges, and contributions. The socio-demographic profile of participants indicates that women engaged in agriculture largely belong to rural settings with limited access to formal education. Many of them are part of joint families where patriarchal norms continue to influence their roles and decision-making authority. The age distribution and marital status of participants also provide crucial context to understanding their involvement in agricultural labor and household responsibilities.

Participation in agricultural activities showcases a significant role played by women, ranging from sowing, weeding, harvesting, and post-harvest processing to livestock rearing. Despite their extensive engagement, their contributions often remain undervalued and undercompensated. The invisibility of women's labor in agricultural statistics further underscores the gender disparity prevalent in rural economies. Additionally, the burden of unpaid household labor compounds the challenges faced by women, limiting their ability to access employment opportunities outside their immediate agrarian setup.

Land ownership and access to agricultural resources emerge as critical determinants of women's economic empowerment. The analysis reveals that while a fraction of women possess land titles, the majority continue to depend on male family members for access to farming resources. Limited ownership rights restrict their ability to secure agricultural loans, government subsidies, and technological advancements in farming. Strengthening legal frameworks for women's land rights can significantly enhance their socio-economic security and decision-making power in agricultural practices.

Financial autonomy and economic contributions remain constrained due to gendered wage disparities and lack of control over agricultural earnings. The study highlights that women's incomes are often directed toward household expenses and children's education, yet they exercise minimal control over financial decisions. Many women engage in informal savings groups and self-help initiatives, which provide limited economic security but do not substitute for formal financial inclusion. Expanding access to banking services and microfinance tailored for women farmers can bolster their financial independence.

Decision-making authority in agriculture and household matters presents a mixed picture. While some women participate in joint decision-making processes with their husbands, many remain excluded from critical financial and agricultural decisions. The sociological study finds that decisions related to major agricultural investments, land utilization, and sale of produce are predominantly made by male members. However, women exercise greater influence in household budgeting, children's education, and food security-related decisions. Empowering women through targeted policy interventions and awareness programs can foster greater inclusivity in decision-making structures.

Working conditions and health impacts reveal significant concerns, as agricultural labor often exposes women to physically demanding tasks with minimal access to protective measures. Prolonged exposure to pesticides, long working hours, and lack of sanitation facilities exacerbate health risks. The absence of gender-sensitive labor policies further compounds their vulnerabilities, necessitating urgent interventions in terms of occupational health safeguards, maternity benefits, and ergonomic innovations in farming tools.

Education, skill development, and training remain crucial for enhancing women's productivity and economic mobility. The study highlights that most women engaged in agriculture lack access to formal education and skill enhancement programs. Limited literacy levels hinder their ability to adopt modern agricultural techniques and negotiate better market prices for their produce. Investing in agricultural extension services and vocational training specifically designed for women can bridge this gap, fostering economic self-reliance and improved agricultural outcomes.

Key challenges and opportunities for women in agriculture encompass a wide spectrum of socio-economic and structural barriers. While traditional norms and gender biases restrict their participation in land ownership and decision-making, emerging policy frameworks and grassroots movements offer pathways for change. Government initiatives, cooperative models, and digital technology adoption present opportunities to enhance women's visibility and agency in agriculture. Ensuring robust implementation of gender-inclusive agricultural policies can create a more equitable and sustainable agricultural landscape.

Therefore, the findings of this study underscore the indispensable role of women in agriculture while highlighting the urgent need for systemic reforms to address gender disparities. By fostering legal, financial, and educational empowerment, coupled with improved working conditions and decision-making authority, the livelihoods of women in agriculture can be

significantly strengthened. The integration of gender-sensitive policies and capacity-building measures will not only uplift women's socio-economic status but also contribute to the overall development and sustainability of the agricultural sector in Kurukshetra district and beyond.

4.3 Qualitative Insights and Thematic Analysis Representation:

This section presents an in-depth qualitative analysis derived from thematic analysis to comprehensively explore the lived experiences, socio-economic realities, and challenges faced by women in agriculture within the Kurukshetra district of Haryana. With a sample size of 200 women, the qualitative data has been meticulously collected through Focus Group Discussions (FGDs) and In-Depth Interviews (IDIs), ensuring a holistic representation of diverse perspectives. This section aims to capture and interpret the nuanced insights emerging from these interactive discussions, shedding light on the multidimensional aspects of women's livelihoods in agriculture. Unlike quantitative analysis, which focuses on numerical data, qualitative analysis provides a deeper understanding of the social, economic, and cultural constructs influencing women's roles in the agricultural sector. By thematically organizing the participants' responses, this section highlights significant patterns and recurring themes, offering valuable insights into their struggles, aspirations, and contributions.

The thematic analysis employed in this study follows a structured six-phase approach, ensuring a systematic and rigorous interpretation of qualitative data. The process begins with familiarization with the data, where transcripts from FGDs and IDIs are thoroughly reviewed to identify meaningful narratives. Subsequently, initial codes are generated, categorizing key observations into relevant thematic areas. The next phase involves searching for themes, where similar codes are grouped into overarching categories representing critical aspects of women's agricultural livelihoods. These themes are then reviewed, refined, and defined to ensure coherence and consistency, culminating in the final phase, where insights are synthesized and reported. Observations and key findings from this thematic analysis are systematically recorded and categorized under multiple interconnected aspects, allowing for an in-depth exploration of the various dimensions shaping women's participation in agriculture. The primary objective of this analysis is to uncover the socio-economic barriers, gender dynamics, power relations, and institutional gaps that influence women's roles in the agricultural landscape while simultaneously identifying pathways for empowerment and development.

To achieve a structured and well-organized presentation of findings, this section is systematically divided into eight key thematic sub-sections, each focusing on a crucial dimension of the study. Firstly, "Socio-Demographic Profile of Participants" provides a qualitative understanding of the respondents' backgrounds, including their age, education, marital status, family structure, and social positioning within their communities. This section helps in contextualizing their agricultural engagement within their broader socio-economic realities. Secondly, "Participation in Agricultural Activities" examines the specific roles and responsibilities that women undertake in farming and allied sectors. It delves into their involvement in crop cultivation, livestock management, post-harvest processing, and marketing, highlighting variations based on landholding size, seasonal demand, and cultural norms that shape their agricultural engagement.

The third thematic aspect, "Land Ownership and Access to Agricultural Resources", critically explores women's ownership and control over agricultural land, inheritance rights, leasing patterns, and access to essential farming inputs such as irrigation facilities, fertilizers, and modern farming techniques. This section assesses how legal frameworks, patriarchal structures, and institutional barriers impact women's access to agricultural resources. Fourth, "Financial Autonomy and Economic Contributions" investigates women's involvement in income-generating activities, their contributions to household economies, and their level of financial independence. This sub-section also analyzes wage disparities, informal labor participation, and women's ability to engage in entrepreneurial ventures within the agricultural sector.

Furthermore, the fifth sub-section, "Decision-Making Authority in Agriculture and Household Matters", examines the extent of women's participation in critical decision-making processes related to agricultural planning, farm investments, household expenditures, and social and cultural functions. It assesses the power dynamics within households and communities, identifying whether women possess agency in shaping agricultural and domestic decisions or if traditional patriarchal norms continue to limit their influence. The sixth thematic category, "Working Conditions and Health Impacts", delves into the occupational hazards, physical burdens, and health-related consequences that women face while working in agriculture. It discusses issues such as prolonged exposure to pesticides, musculoskeletal disorders due to strenuous labor, and the accessibility of healthcare services for female agricultural workers.

Additionally, the seventh thematic sub-section, "Education, Skill Development, and Training", explores the literacy levels, vocational training programs, and extension services available to women in agriculture. It evaluates the role of education and skill development in enhancing women's agricultural productivity and their ability to adopt modern farming techniques, technological innovations, and sustainable agricultural practices. Lastly, "Key Challenges and Opportunities for Women in Agriculture" provides a comprehensive synthesis of the structural and socio-cultural barriers hindering women's agricultural empowerment. This section highlights critical challenges such as limited access to credit, lack of institutional support, wage inequalities, and gender-based discrimination, while also identifying potential opportunities, including self-help groups, cooperative farming, policy interventions, and governmental welfare programs aimed at promoting women's participation in agriculture.

Through this detailed qualitative analysis, the study seeks to bridge the gap between policy frameworks and ground realities, offering a sociological perspective on the complex interplay of gender, agriculture, and rural development. The insights derived from FGDs and IDIs not only enhance our understanding of the socio-economic conditions of women in agriculture but also provide practical recommendations for fostering an inclusive and gender-responsive agricultural system. This section, therefore, serves as an essential foundation for policy advocacy, academic discourse, and community-driven initiatives aimed at improving the livelihoods of women engaged in agriculture within the Kurukshetra district of Haryana.

4.3.1 Socio-Demographic Profile of Participants:

The socio-demographic profile of the participants serves as the foundation for understanding the diverse backgrounds and lived experiences of women engaged in agricultural activities in the Kurukshetra district of Haryana. This sub-section aims to qualitatively analyze and interpret how different socio-demographic factors influence women's roles, responsibilities, challenges, and decision-making abilities in the agricultural sector. By delving into key parameters such as age, educational background, marital status, family structure, caste composition, and overall socio-economic standing, this section provides a comprehensive contextual framework for the study. The insights gained from this thematic analysis will help in understanding the intersectionality of social, economic, and cultural factors that shape women's agricultural livelihoods, enabling a more nuanced interpretation of their participation in farming and allied sectors.

The thematic analysis in this section is conducted on the basis of multiple key parameters that help in categorizing the socio-economic diversity among the women respondents. Age distribution is a crucial aspect, as it helps in understanding the generational engagement of women in agriculture, the extent of their physical participation in farming activities, and how responsibilities shift across different age groups. Women from different age brackets may have varied experiences in agricultural practices, with younger women often being introduced to farming at an early stage and older women holding greater responsibilities in farm management and decision-making. Similarly, educational background plays a significant role in determining women's awareness, skill sets, and access to modern farming techniques. The study examines whether literacy levels impact their ability to access agricultural resources, interact with extension services, or engage in formal agricultural training programs. Furthermore, marital status is analyzed to understand how marriage influences women's economic roles, land ownership rights, and participation in household decision-making related to farming. Married women often have different levels of autonomy compared to widowed or single women, affecting their involvement in financial matters and agricultural planning.

Another key parameter explored in this section is the family structure, which includes joint, nuclear, or extended families, as it significantly impacts women's workload distribution, mobility, and autonomy in agricultural activities. Women from joint families may experience greater support but also restrictions in decision-making, whereas those from nuclear households may have more responsibilities but also higher financial independence. Additionally, caste composition and socio-economic status are analyzed to determine how deeply embedded social hierarchies affect women's access to land, credit, and institutional support. Women belonging to marginalized communities often face additional challenges in securing agricultural resources, fair wages, and market opportunities. Socio-economic classification is also examined to assess whether financial stability influences women's ability to invest in farming equipment, lease land, or engage in income-generating agricultural activities.

The insights obtained from this thematic analysis provide a critical foundation for understanding the broader implications of socio-demographic factors on women's livelihoods in agriculture. By systematically documenting the diversity in socio-economic backgrounds, this study can highlight structural inequalities, gender-based disparities, and barriers that hinder women's empowerment in agriculture. Furthermore, these qualitative observations will facilitate a comparative understanding of how different social groups experience agriculture differently, contributing to more inclusive and targeted policy recommendations. The accumulated data will not only serve as an essential reference for further thematic discussions in this study but will also help in designing policy interventions, skill-development programs, and institutional support mechanisms that address the unique needs of women farmers in Kurukshetra. Ultimately, by capturing the socio-demographic landscape of the participants, this section will contribute significantly to the overarching goal of developing gender-responsive agricultural policies and empowerment strategies for rural women.

Qualitative Insights and Thematic Analysis:

A comprehensive examination of the socio-demographic profile of women engaged in agriculture in the Kurukshetra district of Haryana is essential to understanding the underlying social, economic, and structural factors that shape their agricultural participation, decision-making authority, and financial autonomy. This subsection presents a structured qualitative analysis based on responses gathered through Focus Group Discussions (FGDs) and In-Depth Interviews (IDIs) with 200 women agricultural workers from diverse backgrounds.

The socio-demographic profile of participants has been analyzed across five critical thematic areas:

1. Age Distribution and Generational Agricultural Engagement
2. Educational Attainment and Awareness Levels
3. Marital Status and Household Responsibilities
4. Family Structure and Socio-Economic Positioning
5. Caste Composition and Land Ownership Patterns

Each thematic area is examined through qualitative insights, providing an in-depth exploration of women's lived experiences, challenges, and perspectives, followed by a thematic analysis, which categorizes and interprets recurring patterns and trends to facilitate a structured

understanding of the socio-demographic factors influencing women's livelihoods in agriculture.

1. Age Distribution and Generational Agricultural Engagement:

1.1 Qualitative Insights

The age composition of women engaged in agriculture significantly determines their level of participation, type of agricultural work, and access to decision-making opportunities. Among the 200 respondents, 27% (54 women) fall in the 18–30 age group, 52% (104 women) belong to the 31–50 age group, and 21% (42 women) are above 51 years. The younger women, mostly involved in ancillary farming tasks, report that patriarchal structures and cultural restrictions limit their ability to make agricultural decisions, as male members of the family predominantly control financial matters and land ownership.

Middle-aged women, representing the largest segment, bear the dual burden of agricultural work and household responsibilities, with 78% stating that they work for over 10 hours per day across both domains. Despite this, only 15% claim to have direct financial control over their earnings, while the rest rely on their husbands or elders for economic decisions. Older women (51+ years) primarily play supervisory and advisory roles, with nearly 60% influencing crop selection and storage techniques but lacking formal recognition in financial and land ownership matters.

1.2 Thematic Analysis

- **Young Women (18–30 years):** Low participation in core farming decisions, limited financial control, and higher inclination toward alternative employment if given the opportunity.
- **Middle-Aged Women (31–50 years):** Maximum labor contribution but minimal economic decision-making power. High workload but restricted access to financial independence.
- **Older Women (51+ years):** Advisory role in farming but lack direct economic authority or inheritance rights. High dependence on male family members.

2. Educational Attainment and Awareness Levels:

2.1 Qualitative Insights

Education serves as a pivotal factor influencing women's awareness, adaptability, and ability to access agricultural resources, financial schemes, and technological advancements. Among the surveyed participants, 32% (64 women) have never attended school, 41% (82 women) have completed only primary education, while 27% (54 women) have attained secondary education or higher. Women with higher educational qualifications exhibit a greater understanding of modern agricultural techniques and financial management, with over 65% showing an inclination toward agro-based entrepreneurship.

Conversely, women with no formal education are highly dependent on traditional farming methods and are largely excluded from institutional agricultural benefits and credit opportunities. Only 11% of uneducated women were aware of government support schemes such as Kisan Credit Cards (KCC) or Self-Help Groups (SHGs), compared to 63% of educated women who had some level of financial literacy.

2.2 Thematic Analysis

- **Women with No Formal Education:** Reliance on traditional farming knowledge, lack of financial independence, and exclusion from institutional agricultural programs.
- **Women with Primary Education:** Basic understanding of farming techniques but limited awareness of agricultural policies and financial assistance programs.
- **Women with Secondary Education and Beyond:** Higher financial independence, increased likelihood of engaging in diversified farming practices, and greater participation in community-based agricultural initiatives.

3. Marital Status and Household Responsibilities:

3.1 Qualitative Insights

The marital status of women significantly shapes their role in agricultural decision-making and financial autonomy. Among the surveyed participants, 80% (160 women) are married, 12% (24 women) are widowed, and 8% (16 women) are either single or separated. Married women typically juggle household chores with farming duties, with 75% stating they work over 10 hours a day. However, financial control remains concentrated in the hands of male family members, with only 19% of married women having independent access to income and credit facilities.

Widowed and single women show higher levels of financial and agricultural decision-making autonomy, with 68% managing farming investments independently. However, legal and bureaucratic hurdles often obstruct their access to land inheritance rights, leading to financial instability and social vulnerability.

3.2 Thematic Analysis

- **Married Women:** High labor burden but minimal financial autonomy. Limited participation in agricultural decision-making.
- **Widowed Women:** Greater autonomy in financial decisions but face bureaucratic challenges in accessing land and credit.
- **Single/Separated Women:** Higher inclination toward alternative income sources but experience **social stigmatization and economic insecurity**.

4. Family Structure and Socio-Economic Positioning

4.1 Qualitative Insights

The type of family structure influences women's agricultural responsibilities, financial access, and decision-making roles. 62% of the respondents belong to joint families, where agricultural tasks are shared among multiple women, but economic authority remains centralized with male elders. Women in nuclear families (38%) report higher financial independence and direct involvement in decision-making but face greater financial strain due to limited shared labor resources.

4.2 Thematic Analysis

- **Joint Families:** Shared labor responsibilities but lower financial autonomy for women.
- **Nuclear Families:** Increased financial independence but greater workload and fewer labor resources.

5. Caste Composition and Land Ownership Patterns

5.1 Qualitative Insights

Caste remains a major determinant of access to land, financial resources, and agricultural opportunities. The sample includes women from dominant caste groups (48%) and marginalized communities (52%). Women from dominant castes are more likely to own land (72%) and have greater access to credit and modern farming technologies, while 85% of marginalized women work as landless agricultural laborers, with low wages and seasonal employment insecurity.

5.2 Thematic Analysis

- **Women from Dominant Castes:** Higher land ownership and financial stability but still face gender-based limitations in decision-making.
- **Women from Marginalized Communities:** Greater dependence on daily wage agricultural labor, minimal financial security, and lack of land rights.

The qualitative analysis of the socio-demographic profile of women in agriculture in Kurukshetra district reveals persistent disparities rooted in age, education, marital status, family structure, and caste composition. The thematic analysis highlights how these socio-economic determinants influence women's roles, financial autonomy, and decision-making power within the agricultural sector. The insights gained from this study emphasize the urgent need for policy interventions, such as women-focused financial inclusion programs, legal reforms for land inheritance rights, and targeted education and skill development initiatives, to ensure that women engaged in agriculture achieve greater economic empowerment and social equity.

4.3.2 Women's Participation in Agricultural Activities:

The participation of women in agricultural activities is a critical aspect of rural economies, particularly in agrarian societies like the Kurukshetra district of Haryana. Despite their substantial involvement in both core and allied agricultural tasks, their contributions remain largely unrecognized in formal agricultural policies and economic frameworks. The objective of this sub-section is to systematically explore and analyze the nature, extent, and significance of women's participation in agriculture through qualitative insights derived from Focus Group Discussions (FGDs) and In-Depth Interviews (IDIs) with 200 women respondents. The study aims to highlight the lived experiences, struggles, and contributions of these women while also identifying the challenges and socio-economic factors that shape their participation. Through a thematic analysis of their narratives, this section will provide a comprehensive understanding of women's roles in agriculture, focusing on aspects such as gender-based labor division, seasonal workload variations, mechanization and its impact, wage disparities, and socio-cultural barriers that affect women's full participation in agricultural decision-making and resource access.

To achieve an in-depth qualitative representation, this section will be structured around five major thematic areas that define the participation of women in agricultural activities. Firstly, an analysis of the types of agricultural tasks performed by women will be conducted, identifying whether they engage in field preparation, sowing, weeding, harvesting, threshing, post-harvest processing, and allied activities like dairy farming, poultry, and sericulture. A clear understanding of task distribution will be established to differentiate between their involvement in labor-intensive manual work and mechanized tasks. Secondly, the study will examine seasonal variations and workload distribution, determining how women's agricultural

workload fluctuates during peak sowing and harvesting periods compared to off-season engagement. The analysis will also explore how climatic conditions, irrigation schedules, and crop cycles influence the intensity and nature of women's agricultural labor.

A significant component of this qualitative analysis will be the impact of mechanization on women's roles in agriculture. With the increased use of advanced agricultural machinery, women's participation in direct farming activities has undergone transformations. This section will assess whether mechanization has reduced or displaced women's employment opportunities or facilitated easier farming methods, allowing them to diversify their roles into agri-entrepreneurship or self-help group activities. The study will also explore whether mechanization has led to an increased dependency on male family members for machine operations, further restricting women's economic agency in farming households. Additionally, the wage disparities and economic returns from agricultural labor will be critically examined. Qualitative insights will provide a deeper understanding of how women's agricultural labor is valued compared to their male counterparts, whether they receive fair compensation, and whether they have direct control over their earnings. The study will further explore the modes of wage payment, access to agricultural subsidies, and financial independence among women workers.

Lastly, this section will delve into the challenges and barriers hindering women's full participation in agricultural activities, identifying structural, economic, and social factors that restrict their agency. The analysis will highlight gender-based discrimination in land ownership, limited access to agricultural credit, lack of formal training and skill development, and societal norms that often confine women to unpaid or low-paying labor-intensive tasks. Additionally, it will explore how patriarchal family structures and male-dominated decision-making processes further marginalize women in the agricultural workforce. By evaluating these challenges through qualitative narratives, this study will identify potential areas for policy intervention and socio-economic reforms that can empower women with greater financial autonomy, improved working conditions, and access to agricultural education and modern farming techniques.

The accumulated qualitative insights and thematic analysis from this section will significantly benefit the study by offering a holistic perspective on the intricate role of women in agriculture. The findings will provide valuable empirical evidence to advocate for gender-sensitive agricultural policies, capacity-building initiatives, and the implementation of women-centric

financial and technological support programs. Furthermore, by highlighting women's resilience, aspirations, and adaptive strategies, this section will contribute to broader discussions on rural development, economic inclusivity, and social equity in the agricultural sector of Haryana.

Qualitative Insights and Thematic Analysis:

The role of women in agriculture is indispensable, yet their participation often remains undervalued in formal economic and policy frameworks. In the Kurukshetra district of Haryana, women engage in a multitude of agricultural activities, ranging from primary farm labor to post-harvest processing and allied agrarian tasks. However, their contributions are largely unrecognized, informal, and constrained by socio-cultural norms that limit their access to resources, decision-making authority, and financial independence. This section delves into a comprehensive qualitative exploration of women's participation in agricultural activities, analyzing their lived experiences, the structural challenges they encounter, and the evolving trends in their engagement. The findings presented here are derived from Focus Group Discussions (FGDs) and In-Depth Interviews (IDIs) conducted with 200 women respondents, representing diverse socio-economic backgrounds, landholding patterns, and occupational roles within the agricultural landscape of Kurukshetra.

Thematic analysis has been performed to categorize and interpret the qualitative data collected, providing an in-depth understanding of the structural patterns, gendered labor divisions, economic dynamics, and socio-cultural influences shaping women's participation in agriculture. The analysis is structured around five major thematic areas, each addressing a key dimension of women's agricultural engagement. The qualitative insights derived from the participants' narratives have been systematically examined to identify recurring patterns, variations, and underlying socio-economic dynamics.

Thematic Area: 1 - Types of Agricultural Tasks Performed by Women

Qualitative Insights

Women in Kurukshetra actively participate in various agricultural tasks, with their roles spanning across different phases of the farming cycle. Over 85% of the respondents reported being involved in manual farm labor, including sowing, weeding, transplanting, and harvesting, while a smaller proportion engaged in post-harvest activities such as grain cleaning, threshing, and storage. Additionally, approximately 40% of women contribute to animal husbandry, dairy farming, and fodder collection, further extending their agrarian responsibilities beyond direct crop cultivation. A noteworthy observation is that despite their substantial involvement, the tasks assigned to women are often labor-intensive and time-consuming, while mechanized or technologically advanced roles remain predominantly occupied by men. Many participants shared that they work for 8-12 hours a day in peak seasons, yet their labor is often categorized as ‘family assistance’ rather than formal employment, leading to economic invisibility.

Thematic Analysis

The thematic analysis highlights the existence of a highly gendered division of labor, where women are primarily engaged in manual, repetitive, and physically demanding tasks, while men undertake mechanized operations such as plowing, pesticide spraying, and irrigation management. Additionally, seasonal variations play a crucial role in determining the intensity of women’s workload, with peak labor demands observed during sowing and harvesting periods. The lack of recognition for women’s contributions in farm activities not only affects their economic valuation but also limits their bargaining power within the household and community structures.

Thematic Area: 2 - Seasonal Variations and Workload Distribution

Qualitative Insights

Women’s participation in agricultural activities exhibits significant seasonal variations, with their workload being highest during sowing (June–July) and harvesting (April–May for wheat, October–November for rice). During these peak agricultural cycles, over 75% of respondents reported an increase in their daily labor hours, often extending to 14-16 hours per day. The seasonal nature of work also leads to high physical exhaustion and health-related issues, particularly due to prolonged exposure to extreme temperatures, lack of protective gear, and insufficient access to rest periods. Furthermore, during off-season periods, approximately 30%

of women engage in supplementary work such as vegetable cultivation, floriculture, or small-scale animal husbandry to sustain household income.

Thematic Analysis

This thematic analysis underscores the cyclical nature of women's labor burdens, which fluctuate according to seasonal demands. The study reveals that women bear a disproportionately high workload during peak periods, yet their contributions remain largely unpaid or significantly underpaid. Additionally, the absence of institutional support mechanisms, such as provision for seasonal employment schemes, occupational health interventions, and social security measures, exacerbates their economic vulnerability. This underscores the need for policy interventions that address seasonal employment stability and labor rights for rural women in agriculture.

Thematic Area: 3 - Impact of Mechanization on Women's Roles

Qualitative Insights

The increasing mechanization of agricultural processes has had mixed consequences for women's participation in farm activities. While over 60% of respondents acknowledged that mechanization has reduced the physical strain associated with tasks such as threshing and grain processing, nearly 45% expressed concerns about declining employment opportunities due to machines replacing manual labor. Women's limited access to modern farming tools and lack of formal training in handling mechanized equipment further exacerbates gender disparities in agricultural work. Many women shared that the introduction of tractors, harvesters, and automatic threshers has resulted in a male-dominated workspace, marginalizing them from primary agricultural roles.

Thematic Analysis

The analysis identifies a clear gender divide in mechanization access, where technological advancements have largely benefited male farmers, while women's roles have remained stagnant or diminished. This reflects an urgent need for gender-inclusive agricultural training programs that empower women with the technical skills required to operate machinery, thus preventing their exclusion from mechanized farming opportunities. Furthermore, policies that facilitate subsidized access to modern farming tools for women farmers can contribute to bridging this technological divide.

Thematic Area: 4 - Wage Disparities and Economic Returns from Agricultural Work

Qualitative Insights

A recurring theme in the study is the existence of significant wage disparities between male and female agricultural workers. Approximately 80% of women respondents reported earning 20-40% less than their male counterparts, despite engaging in equally labor-intensive tasks. In cases where women work as daily wage laborers, their wages range between ₹200-₹250 per day, whereas men performing similar or lesser strenuous work earn between ₹300-₹400 per day. Additionally, nearly 90% of women workers stated that they do not have control over their earnings, as financial decisions are often made by male household members.

Thematic Analysis

The analysis highlights deep-rooted economic inequalities, with gendered wage gaps serving as a key barrier to women's financial autonomy. The study suggests that institutional interventions, such as ensuring minimum wage enforcement, transparent payment methods, and direct financial access for women workers, are critical to bridging the economic disparity. Furthermore, promoting collective bargaining mechanisms, self-help groups (SHGs), and microfinance programs can enhance women's control over their earnings and foster greater financial independence.

The qualitative insights and thematic analysis presented in this section underscore the structural inequalities, economic marginalization, and socio-cultural constraints that shape women's participation in agriculture. The findings provide a strong empirical foundation for advocating gender-responsive agricultural policies, enhanced labor protections, and inclusive mechanization strategies. By addressing these disparities, policy interventions can pave the way for greater economic empowerment, skill development, and improved work conditions for rural women engaged in agriculture in Kurukshetra and beyond.

4.3.3 Land Ownership and Access to Agricultural Resources:

Land ownership and access to agricultural resources play a crucial role in determining the economic empowerment, social status, and livelihood security of women in agriculture. In rural areas like Kurukshetra district, Haryana, where agriculture remains the primary source of income, women contribute significantly to farming activities, yet their rights to land ownership and agricultural resources remain highly restricted. This section aims to explore the extent to which women have ownership over agricultural land, the socio-cultural and legal barriers they face in acquiring land rights, and their access to critical agricultural resources such as credit, irrigation facilities, high-yield seeds, fertilizers, modern farming equipment, and government welfare schemes. By examining these aspects, this study seeks to highlight the inequalities that exist in agricultural resource distribution and decision-making, emphasizing the need for gender-sensitive policies and reforms.

The qualitative insights in this section are drawn from focus group discussions (FGDs), in-depth interviews (IDIs), and case studies involving women farmers, landless female agricultural laborers, and key stakeholders such as local government officials and financial institutions. Thematic analysis will be conducted on multiple parameters, including legal ownership and inheritance rights, financial constraints in accessing agricultural credit, institutional support for resource allocation, and socio-cultural perceptions regarding women's entitlement to land and agricultural assets. The key objective is to uncover how these factors collectively influence women's participation in agriculture and their ability to achieve economic self-reliance.

The findings from this analysis will be instrumental in shaping policies that promote equitable land distribution, ensure access to agricultural resources, and empower women with legal and financial independence in the farming sector. Addressing these issues is essential not only for enhancing women's socio-economic well-being but also for improving agricultural productivity, rural development, and overall food security. The results of this study will contribute to a broader dialogue on gender-inclusive agricultural policies and serve as a foundation for advocacy efforts aimed at ensuring women's rightful access to land and agricultural inputs.

Qualitative Insights:

Despite their extensive involvement in agricultural work, women in Kurukshetra district largely remain deprived of legal ownership and control over land. The deep-rooted patriarchal inheritance system and socio-cultural norms dictate that land remains within the male lineage, leaving women with minimal decision-making power in agricultural affairs. Many women farmers engaged in daily agricultural activities reported that their access to land is mediated through male family members—fathers, husbands, or sons—who legally own and control property rights. Even when women inherit land, they often face social pressures to transfer ownership to male relatives, reinforcing their economic dependence and restricting their ability to utilize land for financial or agricultural benefits.

One of the significant barriers women encounters is the lack of awareness regarding their legal land rights under the Hindu Succession Act, 2005. Interviews revealed that a majority of women were unaware of their legal entitlement to ancestral property, and even those who were aware lacked the necessary legal and institutional support to claim their inheritance. Bureaucratic challenges, such as complex documentation processes, high legal fees, and reluctance from revenue officials to process women's land ownership claims, further discourage women from asserting their rights. Moreover, women who attempt to claim land ownership often face opposition from family members, leading to social tensions, exclusion, and in extreme cases, legal disputes.

Another critical aspect is the impact of land ownership on women's access to financial resources. Banks and financial institutions generally require land ownership documents as collateral to approve agricultural loans and credit. Since most women lack legal land titles, they are often unable to secure formal loans and are forced to rely on informal credit sources such as moneylenders, community borrowing, or self-help groups (SHGs), often at high interest rates. This financial exclusion limits their ability to invest in better-quality seeds, fertilizers, and modern farming equipment, ultimately affecting productivity and income generation. Additionally, the absence of land titles prevents women from accessing government agricultural schemes meant to support small and marginal farmers, further widening the resource gap between male and female farmers.

Access to essential agricultural resources also remains unequal, as women farmers often face challenges in obtaining irrigation facilities, quality seeds, fertilizers, and technological advancements in farming. Many agricultural extension services, such as training programs and

resource distribution, primarily target male farmers, excluding women from receiving crucial knowledge and inputs. Cultural restrictions on women's mobility and their limited interaction with institutional agencies further restrict their ability to benefit from modern agricultural advancements. The gender disparity in market access and pricing negotiations also emerged as a pressing issue, with women reporting that they have little control over the sale of agricultural produce, which is often managed by male family members.

Social and cultural biases remain a dominant factor in restricting women's land rights and agricultural participation. Traditional customs continue to prioritize male inheritance, while widows, single women, and female-headed households often face extreme difficulties in claiming land rights. The stigma attached to women owning and managing agricultural land leads to their exclusion from community-level decision-making and local governance structures, further weakening their role in the agricultural economy. Overcoming these systemic barriers requires legal awareness campaigns, institutional support, financial inclusion policies, and community sensitization programs to create a more gender-equitable agricultural system.

Thematic Analysis:

Thematic Area No. 1: Legal Ownership and Inheritance Rights

Thematic analysis of land ownership highlights that only a small percentage of women farmers in Kurukshetra legally own agricultural land, despite their substantial contributions to farming activities. Customary practices and male-dominated inheritance laws continue to deny women the right to independently own and control land assets. Women who attempt to assert land rights face family resistance, bureaucratic hurdles, and social ostracization, limiting their ability to exercise ownership. The analysis suggests that simplifying legal inheritance procedures, promoting joint land ownership, and providing legal aid services for women could significantly enhance their control over land.

Thematic Area No. 2: Financial Barriers and Access to Agricultural Credit

One of the primary constraints faced by women farmers is the lack of financial autonomy due to their inability to use land as collateral for agricultural loans. Thematic analysis reveals that over 80% of female farmers depend on informal credit sources, which often come with exploitative interest rates and unfavourable repayment conditions. The exclusion of women from institutional credit systems not only reduces their ability to invest in modern farming

techniques but also limits their participation in high-value agricultural activities. Policy recommendations include gender-sensitive financial policies, alternative credit mechanisms such as microfinance and SHG-based lending, and government incentives for financial institutions to prioritize loans for women farmers.

Thematic Area No. 3: Institutional Support and Agricultural Resource Allocation

Limited institutional support further deepens the gender disparity in agriculture. Women's restricted access to agricultural extension services, modern technology, irrigation systems, and high-yield seeds significantly affects their productivity. Thematic analysis highlights that most government schemes fail to consider women's unique challenges, as eligibility criteria often require land ownership, which women lack. Structural reforms, including women-focused extension services, separate resource distribution centers, and dedicated government initiatives for women farmers, are essential for bridging this gap.

Thematic Area No. 4: Socio-Cultural Constraints and Gender Norms

The final thematic area focuses on the deep-rooted socio-cultural barriers that prevent women from asserting their land rights and participating fully in agriculture. Cultural stigmas, social resistance, and exclusion from decision-making structures limit their role in agricultural governance. Changing this requires community-driven awareness campaigns, gender sensitization programs, and policy interventions that challenge discriminatory practices and promote women's leadership in agriculture.

4.3.4 Financial Autonomy and Economic Contributions:

Financial autonomy and economic contributions are fundamental aspects of women's empowerment in agriculture, particularly in rural settings like Kurukshetra district, Haryana. Despite their significant involvement in farming and allied agricultural activities, women often lack control over financial resources, income, and decision-making in economic matters. The purpose of this section is to examine the extent to which women possess financial independence, their ability to access and manage earnings, and their role in contributing to the household economy. Additionally, this section aims to explore the barriers that restrict women's economic agency, such as lack of access to credit, discriminatory wage structures, absence of financial literacy, and social norms that reinforce economic dependence on male family members.

This sub-section employs a qualitative approach to assess financial autonomy and economic participation through focus group discussions (FGDs), in-depth interviews (IDIs), and case studies with women farmers, agricultural laborers, and members of self-help groups (SHGs). Thematic analysis will be conducted based on several parameters, including income generation through agricultural work, wage disparity and labor conditions, access to banking and credit facilities, control over earnings, financial decision-making within households, and participation in self-employment and entrepreneurship. Understanding these dimensions is crucial in identifying the socio-economic factors that hinder or promote women's financial empowerment in agriculture.

The insights derived from this study will be instrumental in shaping policies that support financial inclusion, ensure fair wages for women in agriculture, and promote entrepreneurial initiatives among rural women. Additionally, the findings will contribute to broader discussions on gender-sensitive financial reforms, microfinance accessibility, and the integration of women into formal economic structures. Ensuring financial autonomy for women in agriculture not only enhances their economic well-being but also strengthens rural economies by promoting sustainable livelihoods and reducing gender disparities in income distribution.

Qualitative Insights:

Women in Kurukshetra district play a vital role in the agricultural sector, engaging in activities such as sowing, weeding, harvesting, dairy farming, and post-harvest processing. However, despite their active participation, they rarely have direct control over the income generated from agricultural activities. Many women reported that their earnings are often handed over to male family members—husbands, fathers, or sons—who ultimately decide how the money is spent. This lack of financial control reinforces economic dependence and limits women's ability to make independent financial decisions, affecting their overall agency in both household and agricultural matters.

One of the key challenges identified is the prevalence of wage disparities in agricultural labor. Women working as daily wage laborers reported earning 20–30% less than their male counterparts for performing similar tasks. This wage gap is particularly pronounced in manual farming tasks such as plowing, irrigation, and harvesting, where men are considered more skilled and thus paid higher wages. Women also experience irregular employment opportunities due to seasonal fluctuations in agricultural work, further exacerbating their economic vulnerability. Additionally, many women who engage in unpaid labor on family-owned farms

receive no direct financial compensation, despite contributing significantly to agricultural productivity.

Access to banking and financial institutions remains another significant barrier to financial autonomy. Many rural women lack bank accounts in their own names, with financial transactions being conducted through male family members. Interviews revealed that only a minority of women had personal savings accounts, and among those who did, many had limited knowledge of banking services, credit facilities, and digital transactions. The absence of financial literacy programs tailored to rural women further restricts their ability to utilize formal financial services, access credit for agricultural investment, or save for future economic security. Additionally, stringent loan requirements, such as collateral demands and complex documentation processes, make it difficult for women to secure agricultural loans, leaving them dependent on informal lenders who often charge exorbitant interest rates.

Participation in self-employment and entrepreneurship is limited due to multiple socio-cultural and financial constraints. Women who aspire to start small-scale agribusiness ventures, such as dairy farming, poultry, or food processing, often struggle with capital investment, lack of market access, and inadequate government support. Many women expressed interest in expanding their agricultural contributions beyond traditional roles, but social expectations, mobility restrictions, and limited financial independence prevent them from taking entrepreneurial initiatives. While self-help groups (SHGs) have emerged as a promising model for women's financial empowerment, their reach and effectiveness remain inconsistent across different villages, with many women reporting challenges in securing initial funding or navigating bureaucratic hurdles in accessing government-backed financial schemes.

The overall lack of financial decision-making power within households further restricts women's autonomy. In most rural families, major economic decisions, such as purchasing agricultural equipment, investing in fertilizers and seeds, or saving for future agricultural expansion, are made exclusively by men. Even in cases where women contribute to household income, their ability to decide on expenditures remains limited. Many women reported that while they are responsible for managing household expenses such as food, children's education, and healthcare, they rarely have control over larger financial investments or long-term savings. This financial exclusion not only reinforces gender inequalities but also prevents women from actively participating in the broader economic landscape of agricultural development.

Thematic Analysis:

Thematic Area No. 1: Wage Disparities and Economic Dependency

Thematic analysis highlights the persistent wage gap between men and women in agricultural labor, with women earning significantly lower wages despite performing physically demanding tasks. The dependence on male family members for financial decisions limits women's autonomy and prevents them from exercising economic freedom. Addressing this issue requires policy interventions such as gender-based wage standardization, employment guarantees for women in agriculture, and awareness programs advocating for equal pay and economic independence.

Thematic Area No. 2: Limited Access to Banking and Financial Services

Women's restricted access to formal banking institutions and credit services significantly hinders their financial autonomy. Low literacy rates, lack of personal bank accounts, and exclusion from digital financial platforms prevent rural women from engaging in independent financial transactions. Thematic analysis suggests that introducing women-centric banking initiatives, simplified loan application processes, and targeted financial literacy programs can enhance women's financial inclusion and economic participation.

Thematic Area No. 3: Barriers to Entrepreneurship and Self-Employment

The lack of financial support and institutional backing restricts women from engaging in self-employment and agribusiness ventures. Women who attempt to start small-scale agricultural businesses face challenges such as lack of initial capital, difficulty in accessing markets, and societal discouragement. Policy recommendations include expanding microfinance opportunities, creating women-exclusive agricultural cooperatives, and increasing government subsidies for female entrepreneurs to encourage greater participation in agribusiness.

Thematic Area No. 4: Financial Decision-Making in Household and Agriculture

Thematic analysis reveals that financial decision-making remains largely male-dominated, with women having limited control over household and agricultural expenditures. This economic exclusion reinforces dependence and restricts women's ability to invest in agricultural advancements. Reforms such as joint financial decision-making models, targeted economic empowerment programs, and community-based interventions promoting shared

financial responsibilities can help bridge this gap and promote gender-equitable financial participation.

4.3.5 Decision Making Authority in Agriculture and Household Matters:

Women's role in decision-making within agriculture and household matters is a crucial determinant of their overall empowerment and socio-economic status. Despite their active participation in agricultural activities and domestic responsibilities, rural women in Kurukshetra district often experience limited authority in key decision-making processes. The purpose of this section is to critically examine the extent of women's involvement in both agricultural and household decisions, identifying the socio-cultural and structural barriers that restrict their agency. This analysis seeks to explore how deeply ingrained patriarchal norms, traditional inheritance systems, economic dependency, and lack of institutional support affect women's ability to assert their opinions and make autonomous decisions in agricultural planning, financial management, family welfare, and everyday household governance.

The qualitative insights and thematic analysis in this section are based on extensive field observations, in-depth interviews (IDIs), focus group discussions (FGDs), and case studies, providing a holistic understanding of women's role in decision-making. The parameters for analysis include women's participation in agricultural planning (crop selection, resource allocation, farming techniques), financial decision-making (household savings, investments, and agricultural earnings), household governance (children's education, family health, property transactions), and their involvement in community-level decisions (self-help groups, local governance, and social mobility). By systematically evaluating these dimensions, this section will contribute to the discourse on gendered power dynamics in rural Haryana and the structural changes needed to enhance women's decision-making authority.

The observations from this study will serve as a critical foundation for advocating policy reforms, educational initiatives, and community-driven programs that strengthen women's roles in decision-making. By identifying the key factors that limit women's authority, the study will provide concrete recommendations for fostering gender-equitable agricultural and household governance. Additionally, these findings will help policymakers, non-governmental organizations (NGOs), and social reformers develop targeted interventions aimed at dismantling patriarchal barriers and promoting women's active participation in agricultural and household decision-making.

Qualitative Insights:

Women in Kurukshetra district contribute significantly to agricultural labor, engaging in activities such as sowing, weeding, irrigation, and post-harvest processing. However, despite their indispensable role, they are largely excluded from major agricultural decision-making. In traditional rural households, decisions regarding crop selection, land use, purchasing fertilizers and equipment, and selling agricultural produce are primarily made by male members. Even when women work alongside men on family-owned farms, they seldom have a say in strategic agricultural planning. Interviews with female farmers revealed that only 12-15% of women had an active role in determining which crops to cultivate or how agricultural profits should be reinvested, while the remaining majority were merely considered laborers rather than decision-makers.

The scenario is similar in financial decision-making. Many women lack control over agricultural earnings, with over 80% of respondents reporting that their husbands, fathers, or sons controlled household income and agricultural revenues. Women who earn wages through agricultural labor or dairy farming often have little to no say in how their earnings are spent, reinforcing their economic dependence on male family members. This financial exclusion has far-reaching consequences, as it prevents women from making independent investments in agricultural resources, participating in self-help groups, or pursuing economic opportunities beyond traditional farming roles. Additionally, societal norms dictate that women should prioritize household expenses and children's welfare over personal financial autonomy, further limiting their ability to make independent economic decisions.

In household governance, women's decision-making authority is often restricted to routine domestic affairs, such as cooking, child-rearing, and maintaining household hygiene. While they play a significant role in ensuring family well-being, their participation in critical household decisions, such as property transactions, health-related expenses, or arranging marriages and family functions, remains minimal. Many women reported that their opinions were sought but not prioritized when it came to major decisions involving land inheritance, purchasing agricultural machinery, or investing in modern farming techniques. Moreover, in joint family systems, women's voices are often further diminished, with elders—particularly male elders—having the final say in both agricultural and household matters.

One of the key areas of concern is women's participation in community-level decision-making, such as self-help groups, panchayat meetings, and local governance. While government programs have encouraged women's involvement in rural development, only a small fraction of women actively participate in decision-making at the community level. Social restrictions, mobility constraints, and lack of awareness about governance structures prevent them from engaging in collective decision-making platforms that could strengthen their agency. Women who do step forward to assert their opinions often face social resistance, familial opposition, or lack of institutional support, reinforcing their marginalization in both agricultural and household decision-making spheres.

Thematic Analysis:

Thematic Area No. 1: Limited Agricultural Decision-Making Power

The thematic analysis reveals that women's role in strategic agricultural decisions is significantly constrained by patriarchal norms and male-dominated land ownership structures. Despite their contributions to farming, women are largely excluded from decisions regarding land use, crop selection, and resource allocation. This exclusion stems from deep-rooted gender biases that perceive agricultural expertise as a male domain. Addressing this imbalance requires policy interventions that promote joint decision-making models, legal recognition of women as co-farmers, and training programs that equip women with technical agricultural knowledge.

Thematic Area No. 2: Economic Dependence and Financial Exclusion

Financial decision-making is another area where women face structural and social barriers. Even when they contribute to agricultural income, their access to and control over financial resources remain minimal. This lack of autonomy prevents them from making independent investments in agricultural inputs, savings, or entrepreneurial activities. Empowering women with direct financial access through personal bank accounts, microfinance opportunities, and targeted economic awareness programs can help bridge this gap. Policies promoting women-inclusive financial models and direct benefit transfers (DBTs) for female farmers can further enhance their financial agency.

Thematic Area No. 3: Gendered Division of Household Decision-Making

Thematic analysis indicates that while women manage household responsibilities, their role in critical decision-making processes such as land inheritance, property transactions, and health-related expenses is significantly limited. Male members predominantly control legal and economic household matters, leaving women with lesser authority in shaping family assets or long-term financial planning. Community-based initiatives advocating shared decision-making models, awareness programs on women's property rights, and legal literacy campaigns can play a pivotal role in enhancing women's participation in household governance.

Thematic Area No. 4: Barriers to Community-Level Participation

The study also highlights that women's participation in village councils, self-help groups, and community decision-making platforms is significantly low. Social restrictions, lack of mobility, and the absence of leadership training hinder women's active engagement in governance structures. Implementing quota-based representation in panchayats, leadership training programs, and mentorship initiatives for rural women can help increase their visibility and decision-making authority in community affairs. Encouraging women's participation in agricultural cooperatives, producer groups, and self-help initiatives can further enhance their influence in local governance.

The analysis of women's decision-making authority in agriculture and household matters provides critical insights into the gendered power structures that limit women's agency in rural Haryana. Addressing these disparities requires multi-dimensional strategies that promote shared decision-making, financial inclusion, and legal empowerment. Implementing gender-sensitive policies, strengthening institutional support, and challenging deep-seated patriarchal norms are essential steps toward enhancing women's autonomy in both agricultural and household spheres. The findings in this section offer a comprehensive understanding of how decision-making inequalities perpetuate gendered economic disparities and provide a pathway for developing inclusive rural development strategies.

4.3.6 Working Conditions and Health Impacts:

Women form an indispensable part of the agricultural workforce in Kurukshetra district, Haryana, engaging in a diverse range of farming activities such as sowing, weeding, harvesting, threshing, and post-harvest processing. Despite their significant contributions, the working conditions of women in agriculture remain largely unregulated and physically demanding, exposing them to a range of occupational hazards. The purpose of this section is to provide an in-depth analysis of the working environment, labor conditions, and the associated health implications faced by women engaged in agricultural activities. This section aims to investigate the intensity of physical labor, exposure to hazardous agrochemicals, lack of protective equipment, long working hours, and the absence of social security measures that directly impact women's well-being. Additionally, it will examine how seasonal variations, environmental factors, and socio-economic constraints contribute to occupational health risks for women in rural agricultural settings.

The qualitative insights and thematic analysis in this section are drawn from field observations, semi-structured interviews, focus group discussions (FGDs), and case studies, ensuring a comprehensive understanding of the lived experiences of women agricultural workers. The core parameters examined include the nature of daily labor, the impact of working conditions on women's physical and mental health, exposure to agricultural chemicals, access to healthcare facilities, nutritional deficiencies due to labor-intensive work, occupational safety measures, and the availability of rest breaks and sanitation facilities in work environments. Through a detailed thematic analysis, this section will shed light on how inadequate labor protections, gender-based occupational vulnerabilities, and the socio-economic status of women farmers contribute to their health challenges.

The findings from this section will be instrumental in advocating for policy reforms, workplace safety regulations, and health-centric interventions aimed at improving the working conditions of women in agriculture. These insights will provide valuable recommendations for developing gender-sensitive occupational health policies, promoting awareness about labor rights, ensuring access to protective gear, and improving healthcare infrastructure in rural areas. Furthermore, this study will emphasize the necessity of integrating women's health concerns into agricultural labor policies and social security schemes, ensuring long-term improvements in their working conditions and overall well-being.

Qualitative Insights:

Women working in agriculture in Kurukshetra district endure arduous working conditions characterized by excessive physical exertion, long hours of repetitive labor, and poor workplace infrastructure. Many women report that they begin their day before sunrise, engaging in household chores before heading to the fields, where they perform physically taxing activities such as plowing, transplanting, manual weeding, and carrying heavy loads of harvested crops. The nature of these tasks often leads to chronic musculoskeletal disorders, joint pain, and extreme fatigue, as they lack access to mechanized farming tools that could alleviate their burden. Moreover, due to their unpaid or underpaid labor status, women agricultural workers have minimal bargaining power to demand better working conditions or reasonable wages.

Another critical issue is exposure to hazardous agrochemicals, including pesticides, fertilizers, and herbicides, which poses severe health risks to women. Most female agricultural workers handle these chemicals without proper protective equipment, leading to respiratory disorders, skin infections, eye irritation, and long-term reproductive health complications. Prolonged exposure to chemical toxins has been linked to miscarriages, birth defects, and hormonal imbalances among women working in farms. Despite the serious risks involved, awareness about safe handling procedures, the necessity of protective gear, and access to medical check-ups for detecting pesticide-related illnesses remains extremely low.

A significant concern for women working in agriculture is the lack of access to adequate sanitation and clean drinking water in the fields, which further deteriorates their health. Many women are forced to work for extended hours without access to hygienic restrooms, leading to urinary tract infections (UTIs), dehydration, and gynecological issues. This problem is exacerbated during menstruation, as many women refrain from using available facilities due to poor hygiene standards or social taboos surrounding menstrual health. The absence of structured meal breaks and nutritionally deficient diets among female agricultural laborers also contribute to malnourishment, anemia, and chronic fatigue, making them more vulnerable to occupational illnesses.

Furthermore, seasonal variations and climatic conditions significantly impact women's health and productivity in agriculture. During peak summer months, women work under intense heat and direct sunlight, leading to severe dehydration, heat exhaustion, and heat strokes, while during the winter season, exposure to cold temperatures without proper clothing increases the risk of respiratory infections and joint problems. In addition, the physically demanding nature

of agricultural work takes a toll on pregnant and lactating women, who continue to labor under strenuous conditions despite their increased vulnerability, leading to higher rates of maternal health complications, miscarriages, and poor infant health outcomes.

Lastly, the lack of occupational health programs, insurance coverage, and healthcare accessibility further worsens the situation. Many women working in agriculture do not have health insurance, maternity benefits, or access to regular health check-ups, making it difficult to seek medical treatment for work-related illnesses. Limited financial resources, gender biases in healthcare services, and social stigma often prevent women from prioritizing their health, leading to delayed diagnoses, untreated medical conditions, and long-term physical disabilities. The intersection of poor working conditions and inadequate healthcare support creates a vicious cycle of occupational exploitation, declining health, and reduced productivity among women in agriculture.

Thematic Analysis:

Thematic Area No. 1: Excessive Physical Labor and Musculoskeletal Disorders

The findings indicate that women in agriculture perform highly strenuous tasks without adequate tools or mechanization, leading to chronic pain, joint issues, and permanent musculoskeletal injuries. Due to their long working hours and repetitive tasks such as bending, lifting, and manual plowing, they are at a higher risk of early-onset arthritis, spinal disorders, and physical exhaustion. Addressing these issues requires the introduction of labor-saving technologies, ergonomic farming tools, and structured work breaks to reduce physical strain.

Thematic Area No. 2: Exposure to Hazardous Agrochemicals and Health Risks

Women agricultural workers are exposed to toxic pesticides, fertilizers, and herbicides without proper safety measures, resulting in skin diseases, respiratory ailments, reproductive health disorders, and increased cancer risks. Awareness campaigns, mandatory training on safe chemical handling, and provision of protective gear such as gloves, masks, and goggles are essential to minimize chemical exposure and health risks.

Thematic Area No. 3: Inadequate Sanitation, Nutrition, and Healthcare Accessibility

Poor sanitation facilities, lack of menstrual hygiene awareness, and nutritional deficiencies contribute to chronic health problems among women agricultural workers. Many suffer from iron-deficiency anemia, dehydration, UTIs, and gynecological issues due to their inability to

access hygienic restrooms and proper food intake during work hours. Integrating gender-sensitive policies, ensuring clean sanitation infrastructure, and providing nutritional supplements can significantly improve women's health outcomes in agriculture.

Thematic Area No. 4: Climate Vulnerabilities and Seasonal Health Challenges

Women working in agriculture face heightened health risks due to extreme weather conditions, with dehydration, heat strokes, and respiratory infections becoming prevalent during harsh summer and winter months. The lack of climate-responsive labor policies, absence of seasonal health interventions, and minimal access to protective clothing make them vulnerable to climate-induced occupational hazards. Implementing weather-appropriate labor guidelines, hydration programs, and seasonal healthcare interventions can help mitigate these challenges.

Thematic Area No. 5: Lack of Social Security and Health Insurance

The absence of occupational health benefits, maternity support, and health insurance for women agricultural workers leaves them without financial protection during illness or injury. Women engaged in agricultural labor require accessible healthcare services, subsidized insurance schemes, and workplace safety policies to ensure long-term well-being and economic stability. Strengthening government welfare programs targeting women farmers can bridge the gap in occupational health security.

The thematic analysis highlights the urgent need for labor reforms, healthcare improvements, and gender-sensitive occupational policies to address the systemic issues affecting women's health and working conditions in agriculture.

4.3.7 Education, Skill Development & Training:

Education, skill development, and training play a pivotal role in enhancing the socio-economic standing of women in agriculture. In rural areas such as Kurukshetra district, Haryana, women contribute extensively to agricultural labor, yet they face significant barriers in terms of access to education, vocational training, and skill development programs. This section aims to explore the level of educational attainment among women engaged in agriculture, the availability and effectiveness of agricultural skill development programs, and the role of government and non-governmental organizations in promoting training initiatives for rural women. It seeks to analyze how education and training impact women's productivity, financial independence, and decision-making power in agricultural activities. Furthermore, this section will investigate the structural, cultural, and economic challenges that hinder women's participation in skill

enhancement programs and how these challenges can be addressed through targeted interventions.

The qualitative insights and thematic analysis will focus on multiple dimensions of education and skill development, including literacy levels, awareness of modern farming techniques, access to agricultural extension services, participation in self-help groups (SHGs), and the effectiveness of vocational training programs. The analysis will also cover how traditional gender norms and societal attitudes influence women's ability to access education and training, as well as the role of digital literacy in bridging knowledge gaps in rural agricultural communities. By capturing real-life experiences, testimonials, and observational data, this section will provide a comprehensive understanding of how education and training can empower rural women, improve their agricultural productivity, and contribute to sustainable rural development.

Findings from this study will be instrumental in shaping policy recommendations aimed at improving women's access to agricultural education, designing effective skill development programs, and creating an inclusive learning environment that caters to the specific needs of rural women farmers. Additionally, the insights gathered will help in evaluating the impact of existing government schemes such as the National Rural Livelihood Mission (NRLM), the Mahila Kisan Sashaktikaran Pariyojana (MKSP), and various state-level agricultural training programs targeted at women. This analysis will serve as a foundation for developing innovative training models, increasing women's participation in agribusiness, and integrating technology-driven learning solutions to enhance agricultural knowledge and entrepreneurship among rural women.

Qualitative Insights:

Women's access to education and skill development opportunities in agriculture remains highly constrained due to socio-cultural norms, economic limitations, and systemic policy gaps. Many women engaged in farming in Kurukshetra have limited formal education, which restricts their ability to adopt modern agricultural practices, access credit, and participate in decision-making processes. Traditional gender roles often confine women to unpaid agricultural labor, preventing them from seeking education or vocational training that could improve their agricultural productivity and financial independence. The intergenerational cycle of illiteracy among rural women further exacerbates their exclusion from agricultural innovation and financial literacy programs.

Despite the presence of government-run agricultural training institutes and self-help group initiatives, women's participation remains low due to lack of awareness, mobility restrictions, and time constraints arising from household responsibilities. Many training programs fail to consider the specific needs of rural women, including flexible schedules, localized training content, and practical field demonstrations, making them less effective in engaging female farmers. Additionally, limited access to digital education and online learning platforms has further widened the knowledge gap, leaving rural women disconnected from emerging agricultural advancements such as precision farming, climate-smart agriculture, and organic farming techniques.

Another major barrier to women's education and skill development in agriculture is the lack of gender-sensitive extension services. Agricultural extension programs in Haryana are predominantly male-dominated, with very few women extension officers available to provide training to female farmers. This results in low participation rates among women due to socio-cultural constraints that discourage them from attending male-led training sessions. Furthermore, women struggle to access critical information on farm management, credit schemes, and market linkages, limiting their ability to transition from subsistence farming to agribusiness-oriented farming models.

Economic constraints also play a significant role in limiting women's access to education and training. Many rural women lack the financial resources to enroll in skill development programs, purchase agricultural inputs, or invest in mechanization, which restricts their ability to apply modern techniques to farming. The absence of financial literacy programs specifically designed for women farmers has led to poor credit utilization, lack of investment in productivity-enhancing technologies, and dependency on intermediaries for market access. Bridging this gap requires inclusive policies that offer subsidized training, financial incentives, and targeted outreach programs to encourage women's participation in agricultural education.

Despite these challenges, there is a growing recognition of the need to empower women through education and skill development in agriculture. Emerging trends such as women-led cooperatives, community-driven learning initiatives, and digital literacy programs tailored for rural women have shown promising results in enhancing women's knowledge, improving farm efficiency, and increasing household incomes. These initiatives have also contributed to greater gender equity in agriculture, as women who undergo training and skill development are more likely to engage in financial decision-making and entrepreneurship within their communities.

However, sustained efforts are needed to scale up such initiatives and ensure that education and training programs are both accessible and effective for rural women farmers.

Thematic Analysis:

Thematic Area No. 1: Literacy Levels and Agricultural Knowledge

The findings indicate that low literacy levels among women farmers significantly hinder their ability to access agricultural information, adopt modern techniques, and engage in financial decision-making. Women with little or no formal education face challenges in understanding agricultural policies, loan applications, and market trends, making them reliant on male family members for crucial economic decisions. Bridging the literacy gap through targeted adult education programs and informal learning centers can significantly enhance women's autonomy in agriculture.

Thematic Area No. 2: Gender-Specific Barriers to Training Participation

Despite the availability of training programs, women's participation remains low due to cultural restrictions, mobility issues, and time constraints arising from domestic responsibilities. Many women are unable to attend training sessions due to societal norms that discourage their engagement in formal education and skill development. Addressing these challenges requires community-based awareness campaigns, flexible training schedules, and women-led extension services that create a more inclusive learning environment.

Thematic Area No. 3: Digital Literacy and Technological Barriers

Limited access to digital tools, internet connectivity, and technical training prevents women farmers from leveraging online agricultural resources, mobile-based advisory services, and digital marketplaces. Women in agriculture can benefit significantly from mobile-based agricultural education, e-learning platforms, and farmer helplines that provide real-time agricultural guidance and market insights. Expanding digital literacy programs in rural areas can play a crucial role in empowering women farmers with knowledge and skills.

Thematic Area No. 4: Financial Literacy and Economic Empowerment

Many women engaged in agriculture lack awareness about credit facilities, loan repayment structures, and investment opportunities, leading to low financial independence and economic vulnerability. Financial literacy programs tailored specifically for rural women can improve their ability to access loans, manage farm expenditures, and participate in agribusiness.

initiatives. Encouraging women's participation in self-help groups (SHGs) and microfinance institutions can further strengthen their economic resilience in agriculture.

Thematic Area No. 5: Effectiveness of Government and NGO Initiatives

Existing government-led and NGO-run agricultural training programs often fail to address the specific challenges faced by rural women, leading to low enrollment and impact. Enhancing the effectiveness of these programs requires localized training content, on-field demonstrations, mentorship programs, and active involvement of women trainers who can effectively communicate agricultural knowledge to female farmers. Strengthening collaborations between government agencies, NGOs, and grassroots women's organizations can significantly improve the outreach and impact of skill development programs.

The thematic analysis highlights the urgent need to integrate gender-sensitive education, skill development, and training policies in agriculture. Addressing these issues through innovative learning models, digital empowerment, and financial inclusivity will enable rural women to transition from labor-intensive agriculture to knowledge-driven, sustainable farming practices.

4.3.8 Key Challenges and Opportunities for Women in Agriculture:

Women play an indispensable role in agriculture, contributing significantly to various farming activities, livestock management, and household food security. However, despite their crucial involvement, they continue to face numerous socio-economic, institutional, and structural challenges that hinder their ability to fully benefit from their agricultural labor. This section aims to explore the major challenges women in agriculture encounter in Kurukshetra district, Haryana, while also identifying potential opportunities that can enhance their participation, productivity, and financial autonomy in the sector. By analyzing gender-based disparities, access to resources, policy limitations, and societal constraints, this study will provide a comprehensive understanding of the key roadblocks that limit women's empowerment in agriculture. Simultaneously, this section will highlight emerging opportunities such as access to technology, financial inclusion, skill development, and government initiatives that can create a more enabling environment for women farmers.

The qualitative insights and thematic analysis in this section will focus on several critical parameters, including land ownership issues, access to credit and financial institutions, availability of agricultural training programs, technological constraints, labor conditions, market access, and gender-based discrimination. The analysis will also cover how social norms,

policy gaps, and economic disparities contribute to these challenges while assessing the effectiveness of existing government and non-governmental interventions aimed at addressing them. Moreover, the section will emphasize the potential areas where women's involvement in agriculture can be enhanced through structural reforms, financial support, digital empowerment, and gender-inclusive policies.

The findings from this section will provide policy recommendations and strategic solutions to bridge the existing gender gap in agriculture. By identifying both challenges and opportunities, the study will contribute to developing sustainable agricultural models that integrate women as key stakeholders, ensuring their participation in decision-making, income generation, and resource management. Furthermore, understanding these challenges in depth will help in creating targeted interventions that address the unique needs of rural women farmers, thereby promoting economic resilience and social empowerment.

Qualitative Insights:

Women engaged in agriculture in Kurukshetra district face multifaceted challenges that stem from socio-cultural norms, institutional barriers, and economic limitations. One of the most pressing issues is limited access to land ownership, which significantly restricts their decision-making power, financial security, and ability to access agricultural credit. Since landownership is predominantly male-dominated, women farmers often lack legal rights over the land they cultivate, making them ineligible for government schemes, subsidies, and financial aid aimed at agricultural development. This dependency on male family members for land-related decisions leaves them in a vulnerable position, reducing their economic autonomy and bargaining power.

Another critical challenge is limited access to credit and financial resources. Rural women farmers often struggle to obtain loans from formal financial institutions due to a lack of collateral, insufficient documentation, and gender-based discrimination in banking policies. Without financial support, they face difficulties in purchasing high-quality seeds, fertilizers, irrigation facilities, and modern farming equipment, ultimately affecting their agricultural productivity. Although microfinance institutions and self-help groups (SHGs) have played a significant role in providing financial assistance, the outreach and impact of these programs remain limited, necessitating stronger financial inclusion policies.

Furthermore, technological constraints and digital illiteracy pose significant barriers to women's agricultural advancement. The increasing shift towards mechanized farming, digital

marketing platforms, and technology-driven agriculture leaves many rural women behind, as they often lack access to modern farming techniques, mobile-based advisory services, and agri-tech innovations. The absence of gender-inclusive agricultural extension services further exacerbates this gap, as women farmers remain dependent on traditional, labor-intensive farming methods. Bridging this digital divide through technology-driven skill development programs and access to agricultural e-learning platforms can significantly enhance women's productivity and market reach.

Additionally, women in agriculture face considerable labor-related challenges, including long working hours, poor working conditions, wage disparities, and health risks. They are often involved in physically demanding tasks such as sowing, weeding, harvesting, and post-harvest processing, yet their contributions are undervalued and underpaid compared to their male counterparts. The lack of social security measures such as maternity benefits, healthcare access, and pension schemes for female agricultural laborers further aggravates their economic insecurity. Addressing these issues requires comprehensive labor policies, gender-sensitive wage reforms, and improved working conditions to ensure women's well-being in agriculture.

Despite these challenges, several opportunities exist that can improve women's participation and economic status in agriculture. With growing awareness of gender inclusivity in agricultural policies, there is an increasing push for financial independence, cooperative farming, and entrepreneurship among women farmers. Government initiatives such as the Mahila Kisan Sashaktikaran Pariyojana (MKSP), National Rural Livelihood Mission (NRLM), and Pradhan Mantri Fasal Bima Yojana (PMFBY) have started incorporating gender-sensitive frameworks to support women in agriculture. However, greater awareness, accessibility, and implementation of these policies are needed to ensure tangible benefits for women farmers.

Thematic Analysis:

Thematic Area No. 1: Land Ownership and Property Rights

Land ownership remains a major obstacle for women in agriculture, as inheritance laws and patriarchal customs prevent them from gaining direct ownership of land. This limits their ability to access formal credit, make independent farming decisions, and secure long-term agricultural sustainability. Strengthening legal frameworks and awareness campaigns around women's land rights is crucial for their empowerment in agriculture.

Thematic Area No. 2: Financial Inclusion and Access to Credit

Women farmers face significant difficulties in obtaining agricultural credit, microfinance, and institutional loans due to a lack of collateral and banking support. Many women rely on informal lending sources, which often involve high-interest rates and financial exploitation. Expanding women-centric financial schemes and simplifying loan application processes can greatly improve their economic independence.

Thematic Area No. 3: Technological Barriers and Digital Exclusion

The low participation of women in technology-driven agriculture is a major limitation, as they have restricted access to mobile-based advisory services, digital marketplaces, and precision farming techniques. Gender-inclusive agri-tech programs and mobile-based learning platforms can help bridge this gap and enhance their farming knowledge.

Thematic Area No. 4: Labor Inequality and Wage Disparities

Women agricultural laborers often earn significantly less than men, despite performing labor-intensive tasks. They also face poor working conditions, seasonal employment instability, and a lack of healthcare benefits. Introducing equal pay policies, social security measures, and formal recognition of women's agricultural work is necessary for ensuring gender equity in agriculture.

Thematic Area No. 5: Market Access and Value Chain Inclusion

Women's involvement in agribusiness, direct market selling, and supply chains remains limited due to restricted mobility, lack of information, and absence of financial autonomy. Encouraging women-led agricultural cooperatives and supporting female agripreneurs through business incubation programs can open new economic opportunities.

Thematic Area No. 6: Policy Gaps and Gender-Sensitive Interventions

Despite the presence of several government schemes aimed at empowering women in agriculture, poor implementation, lack of awareness, and bureaucratic challenges prevent them from reaching the intended beneficiaries. Strengthening policy execution, promoting community-driven interventions, and ensuring participatory decision-making in agricultural governance can help bridge this gap.

This thematic analysis highlights the urgent need for structural reforms, gender-inclusive policies, and financial empowerment strategies to address the multifaceted challenges faced by women in agriculture. Leveraging emerging opportunities in technology, market access, and entrepreneurship can create a more inclusive and sustainable agricultural framework where women farmers play a central role in rural development and economic progress.

Conclusion:

The qualitative insights and thematic analysis presented in this section offer a comprehensive understanding of the diverse roles of women in agriculture in kurukshetra district, Haryana, shedding light on their contributions and the obstacles they encounter. The research findings indicate that although women play a crucial role in agriculture, they face numerous challenges such as structural inequalities, socio-cultural constraints, and economic barriers that hinder their empowerment and acknowledgment in the field. The socio-demographic profile of the participants indicates that most women engaged in agriculture belong to lower and middle-income rural households, where agricultural work is not merely an economic activity but also a necessity for household survival. Their involvement in agriculture goes beyond conventional roles, encompassing activities like sowing, weeding, irrigation, post-harvest processing, and livestock management, yet their contributions are often overlooked in formal discussions about agriculture. A significant obstacle to their progress is the lack of land ownership and restricted access to agricultural resources, which greatly influence their decision-making abilities, financial situation, and eligibility for institutional support like loans, subsidies, and government programs. The lack of legally recognized land rights for women farmers exacerbates their economic reliance and exclusion from both the family and the agricultural sector.

The study emphasizes that women's financial independence is hindered by restricted access to formal banking services, credit facilities, and self-employment opportunities in the agricultural sector. Despite their significant economic contributions, they are frequently subjected to informal labor arrangements that offer lower wages, seasonal employment, and insufficient social security provisions, leaving them highly susceptible to economic hardships. The power to make decisions in agricultural and household matters is still heavily influenced by traditional gender roles, with men holding the majority of financial decision-making power and limited support for women's involvement in agricultural governance. While some women actively engage in financial management and family decision-making, their autonomy is often limited to smaller household matters rather than significant economic or land-related choices. The working conditions for women in agriculture are a significant issue, as they are subjected to physically demanding tasks, hazardous environmental factors, exposure to pesticides, and extended working hours without proper healthcare or safety precautions. The challenging working conditions, limited access to healthcare services, and absence of maternity benefits exacerbate the declining health conditions of women agricultural workers.

The significance of education, skill development, and training in improving women's role in agriculture is undeniable, yet it is largely overlooked due to systemic obstacles like low literacy rates, inadequate vocational training programs, and limited access to modern farming methods. The lack of gender-sensitive agricultural training programs exacerbates women's challenges in embracing innovative farming techniques, mechanization, and market-oriented agricultural endeavors. Nevertheless, the study also highlights emerging opportunities that can help bridge these gaps, especially through targeted government interventions, financial inclusion strategies, cooperative farming models, and digital literacy programs specifically designed for rural women. By tackling important issues like land ownership, economic involvement, technological access, and gender-inclusive policies, women's capabilities in agriculture can be greatly improved. The thematic analysis highlights that gender-inclusive reforms, participatory decision-making structures, and institutional support mechanisms are crucial for overcoming systemic barriers and ensuring that women receive proper recognition and benefits from their agricultural contributions. Therefore, this research highlights the pressing requirement for policy-driven, community-based, and structural interventions to establish a fair and sustainable agricultural system that values women's empowerment, economic stability, and social respect in kurukshetra district and beyond.

4.4 Summary of Key Findings:

4.4.1 Recapitulation of main findings across all sections:

The research study on women livelihood in agriculture: a sociological study in kurukshetra district, haryana has undertaken a comprehensive exploration of the multifaceted dimensions of women's roles, challenges, and contributions in agriculture using two distinct yet complementary approaches: quantitative insights and statistical representation, and qualitative insights and thematic analysis. The integration of these methods has facilitated a holistic understanding of women's socio-economic conditions, decision-making authority, financial autonomy, land ownership patterns, health impacts, skill development, and the key challenges they face in the agricultural sector. The results offer a practical and thematic evaluation of the prevailing circumstances, illuminating the structural disparities, economic dependencies, and institutional obstacles that impede women's empowerment in agriculture. The data accumulated through surveys, interviews, focus group discussions, and statistical tools such as spss-based frequency distributions, correlation analyses, and graphical representations, enables an evidence-based reflection on the socio-economic realities shaping women's livelihoods in agriculture.

From a statistical standpoint, data collected from 200 individuals residing in various villages within the kurukshetra district indicated substantial variations in land ownership, economic involvement, and access to agricultural resources. The socio-demographic analysis revealed that a significant number of women involved in agricultural work reside in households with small landholdings (less than 2 hectares), with only a small percentage of women having formal ownership rights over land. The research findings revealed that more than 80% of women engage in unpaid family labor in the agricultural sector, while only 18% are paid directly for their contributions. Despite their active involvement in farming activities, women's participation in financial decision-making is still limited, with only 22% actively involved in major agricultural financial transactions. The obstacles to financial independence are intensified by restricted access to credit facilities, bank loans, and self-help groups (shgs), hindering women's capacity to invest in agricultural improvements or entrepreneurial ventures. The study employed clustered bar charts and line graphs to depict trends in income disparities, workload distribution in agriculture, and disparities in credit availability between male and female agricultural workers.

The results of the study on land ownership and access to agricultural resources highlighted significant differences between men and women. Although men typically have control over land inheritance and resource distribution, a mere 7% of surveyed women possess independent access to agricultural machinery and modern farming technologies. The absence of ownership and access restricts their eligibility for government subsidies and agricultural extension services. The statistical analysis of the relationship between land ownership and decision-making authority revealed that women with legal land rights were three times more likely to have a significant impact on major agricultural choices compared to women without ownership rights. Furthermore, a cross-tabulation analysis of education levels and financial autonomy revealed that women with higher literacy rates tended to have more economic independence and actively contribute to household financial decision-making.

From a qualitative standpoint, the thematic analysis offered more profound understandings of the socio-cultural norms, gender biases, and institutional obstacles that contribute to the marginalization of women in agriculture. The study's findings on decision-making authority highlighted that while women actively contribute to agricultural labor, their impact on critical decision-making is often limited to symbolic or secondary roles within the family. The findings from focus group discussions revealed that cultural norms and traditional patriarchal structures still play a significant role in defining gender roles, limiting women's ability to express their opinions in financial, land-related, and agricultural investment decisions. The research also discovered that while women's contributions to agriculture are crucial, their work is often overlooked and not acknowledged in official records or assessments of farm income.

The study's results regarding working conditions and health effects shed light on the physical exhaustion, lack of safety precautions, and health risks experienced by women in the agricultural sector. More than 70% of women reported enduring persistent musculoskeletal pain as a result of extended periods of physically demanding work, while pesticide exposure and inadequate protective gear were frequently mentioned as major concerns. The lack of social security benefits, including maternity leave, health insurance, and accident coverage, worsens their vulnerability. When comparing health indicators between women who work in agriculture and men in similar positions, it was found that women had a higher occurrence of anemia, respiratory problems, and nutritional deficiencies. Additionally, conversations with healthcare providers in rural areas highlighted that restricted access to healthcare facilities and financial limitations frequently compel women to prioritize their household and agricultural duties over their own health requirements.

The importance of education, skill enhancement, and training became evident as a key area that needed attention and intervention. The research discovered that only 16% of the women surveyed had the opportunity to receive any formal agricultural training, and even fewer, less than 10%, were knowledgeable about modern mechanized farming methods. One of the major obstacles identified was the absence of gender-sensitive training programs, low female involvement in agricultural extension services, and insufficient representation of women in farmer cooperatives. The analysis of the relationship between skill development and financial independence showed that women who received any type of agricultural training were 40% more likely to start their own farming businesses compared to those without training. These discoveries emphasize the pressing requirement for inclusive capacity-building programs, vocational training, and technological literacy initiatives to improve women's agricultural productivity and self-reliance.

The study of significant obstacles and potential advantages revealed that despite deeply ingrained socio-economic barriers, emerging opportunities like government-led initiatives for women empowerment, self-help groups (shgs), microfinance institutions, and cooperative farming models present promising paths for advancement. The involvement of women in self-help groups was discovered to have a positive impact on their financial decision-making abilities, savings practices, and access to credit resources. Nevertheless, bureaucratic obstacles, insufficient knowledge, and deeply ingrained social prejudices persist as barriers to realizing the full potential of these endeavors.

Building upon the summary of significant findings, a crucial aspect that emerged from the study is the often overlooked but vital economic contributions of women in agriculture. Despite their active participation in various stages of farming, including sowing, weeding, harvesting, post-harvest processing, and livestock management, women's labor is often overlooked and undervalued in official economic records. The qualitative findings from the study emphasize that most women view their contributions as an integral part of household duties rather than as a source of income. This belief is further supported by long-standing social customs that emphasize male labor as the main factor driving agricultural productivity, even though research indicates that women collectively contribute nearly 60–70% of the total agricultural labor in Haryana's rural economy. The omission of women's economic contributions has significant consequences for their financial independence, societal standing, and eligibility for institutional credit, subsidies, and welfare benefits.

A pattern that consistently links to women's limited financial independence is the ongoing gender-based wage gap in agricultural work. The research discovered that women agricultural workers in kurukshetra receive 25–30% lower wages than men for doing the same work, despite the fact that their workload is typically more demanding. Women who engage in physically demanding agricultural activities like transplanting paddy, threshing wheat, and caring for livestock are frequently compensated with lower daily wages than men who perform mechanized agricultural tasks. The wage gap is worsened by the fact that women often work in seasonal and informal jobs, leaving them more susceptible to economic instability, especially during times when agricultural work is limited. Due to financial limitations, women are unable to invest in agricultural resources, access advanced technology, or expand their farming operations, resulting in a cycle of economic dependence.

One notable discovery is the obstacles that hinder women's access to agricultural resources, particularly government programs and financial institutions. The research findings indicated that a mere 12% of women participants had independently sought agricultural credit from banks or financial institutions, while the majority depended on male family members for financial matters. The absence of land ownership poses a significant obstacle to accessing formal credit, as most financial institutions necessitate land ownership as collateral for loans. Moreover, bureaucratic hurdles, gender biases in lending institutions, and a general lack of awareness about available schemes contribute to the barriers that prevent women from accessing financial support designed to empower them. Despite being eligible for government-backed agricultural schemes, numerous women encountered challenges in obtaining proper documentation, experienced delays in the procedures, and received inadequate support from local authorities. These discoveries emphasize the pressing requirement for policy measures that prioritize women's financial inclusion in agriculture by simplifying access to credit, implementing alternative collateral options, and enhancing financial literacy among rural women.

The limited involvement of women in agricultural training programs, skill development workshops, and extension services is closely associated with financial exclusion. The study found that only 18% of women had attended any formal agricultural training programs in the past five years, with the majority citing time constraints, mobility restrictions, and a lack of encouragement from family members as key reasons for their non-participation. Women who had received training, however, displayed greater confidence in adopting modern farming techniques, managing agribusiness ventures, and utilizing technological advancements. The significant disparity in participation rates highlights the urgent requirement for gender-sensitive

training programs that are tailored to women's schedules, reduce travel burdens, and offer skill-building opportunities within their local communities. The implementation of mobile-based agricultural advisory services, self-help group-led training programs, and community-based extension initiatives has the potential to bridge the gap between farmers and agricultural knowledge.

The study also revealed a concerning trend where gender-based disparities in agriculture have a lasting impact across generations. The qualitative findings indicated that girls from farming families are considerably less likely to be motivated to pursue agricultural education or entrepreneurial endeavors compared to boys. This is based on societal beliefs that farming is not a suitable profession for women, perpetuating the notion that their primary roles should be limited to household duties. Consequently, the upcoming generation of rural women is in danger of experiencing the same economic challenges and limited career opportunities as their predecessors. To break this cycle, it is imperative to introduce policy measures that promote agricultural education for girls, integrate gender-inclusive curricula in agrarian training institutes, and create mentorship programs that connect rural women with successful female agripreneurs.

The comprehensive study's findings provide a detailed overview of the socio-economic challenges experienced by women in agriculture within the kurukshetra district. They emphasize a consistent pattern of systemic exclusion, structural inequalities, and deeply ingrained cultural norms that limit women's autonomy and economic mobility in the agricultural sector. Nevertheless, the study also uncovers new prospects, especially in sectors like cooperative farming, microfinance, agribusiness entrepreneurship, and government-supported initiatives that focus on empowering women in agriculture. Addressing these gender disparities necessitates a collaborative effort from various stakeholders, including policymakers, financial institutions, agricultural training bodies, and rural development organizations, to collectively foster an inclusive and gender-balanced agrarian ecosystem.

The repetition of results emphasizes that although women's involvement in agriculture is extensive and crucial, their socio-economic and institutional standing remains significantly disadvantaged. The quantitative insights highlight statistical patterns of inequality, gender gaps in land ownership, financial exclusion, and deteriorating health conditions, while the qualitative thematic analysis brings forth the lived experiences of rural women, emphasizing socio-cultural constraints, lack of decision-making autonomy, and limited access to skill

development programs. These findings collectively advocate for urgent policy interventions, gender-inclusive reforms, and strategic initiatives aimed at addressing disparities in land rights, financial independence, healthcare accessibility, and capacity-building efforts for rural women in agriculture. The study's empirical evidence and thematic insights thus serve as a critical foundation for future research, policy formulation, and sustainable rural development strategies tailored to enhancing the livelihoods, economic security, and empowerment of women in agriculture across kurukshetra district and beyond.

4.4.2 Integration of Quantitative Data with Qualitative Insights for Holistic Understanding:

The research combines statistical data and personal narratives to provide a comprehensive understanding of women's economic role in farming. While numbers can provide information about the number of women who own land or engage in farming, they do not offer insights into the reasons behind these statistics. Conversely, qualitative insights provide a deeper understanding of the challenges and viewpoints of women, but without quantitative data, it is challenging to determine the precise magnitude of these problems. By integrating these two methodologies, the study not only uncovers trends and patterns but also provides explanations for them, resulting in a more comprehensive and nuanced understanding of women's involvement in agriculture.

For instance, the issue of land ownership is evident in the data—only 14% of women surveyed own agricultural land in their names, while the majority rely on male family members for access. Nevertheless, the qualitative findings emphasize the enduring cultural and legal obstacles that hinder women from owning land, despite their equal contributions to farming. Women mentioned that inheritance laws, family expectations, and limited knowledge about their rights were significant factors contributing to the continued ownership of land by men, even though they are primarily responsible for agricultural activities. The integration of data and firsthand experiences demonstrates that altering laws alone is insufficient, as it is equally important to challenge societal norms and raise awareness regarding land rights.

Similarly, the financial independence of women in agriculture highlights a notable disparity when examined from both perspectives. The statistical results indicate that 68% of women contribute financially to the household, yet only 12% have the authority to determine how their income is utilized. The qualitative findings indicate that this is because of ingrained patriarchal systems, where men are usually in charge of financial matters, even when women earn money

through farming or agricultural work. Numerous women expressed their sense of powerlessness in financial matters, as their earnings were frequently used to cover household expenses without any opportunity for personal savings or decision-making control. This implies that although women play a significant role in the economy, they are not viewed as self-sufficient financial decision-makers, which impacts their long-term economic stability.

The disparity in earnings between men and women in agricultural work is a significant issue that can be better understood by combining both numerical and descriptive data. According to the study, women in the agricultural sector earn approximately 29% less than men for comparable work, with men earning an average of ₹350 per day, while women earn ₹250 per day. Nevertheless, these figures alone do not provide a complete explanation for the disparity. The research findings indicate that women are typically assigned tasks that are less lucrative, such as weeding, harvesting, and post-harvest processing, while men are given positions that involve operating machinery and taking on supervisory responsibilities, which offer higher remuneration. The women in the study expressed that they were seldom given chances to operate tractors or other farming machinery, primarily because traditional gender roles tend to associate physical labor and machinery with men. By combining statistical data with personal anecdotes, the study demonstrates that the wage gap is not solely about financial disparities—it is also a result of job segregation and limited access to skill-building opportunities for women.

In the realm of agricultural and household decision-making, the quantitative data reveals a significant disparity. Only 9% of women reported having the final say in major farming decisions, while 78% stated that their husbands or male family members made those decisions. Surprisingly, the qualitative insights uncover a more intricate truth. Numerous women expressed that despite their active involvement in farming, their opinions and contributions are frequently disregarded when it comes to crucial decisions such as choosing crops, investing in seeds and fertilizers, or selling their produce. This suggests that women's involvement in agriculture is substantial, but their contributions are not formally recognized in decision-making spaces. The amalgamation of both types of data unequivocally demonstrates the hidden nature of women's labor—they toil extensively on farms, yet their role is still perceived as subordinate to men's leadership.

The study combines quantitative data and individual stories when examining women's access to education, skill enhancement, and training opportunities. The data indicates that 82% of the

women surveyed have never received any formal training in agriculture. However, when women were questioned about the factors contributing to their decision to not pursue training, they mentioned a lack of knowledge, time limitations caused by household duties, and the belief that training programs are primarily tailored for men. Numerous women voiced their eagerness to acquire contemporary farming methods, operate advanced machinery, and comprehend market pricing, but they encountered exclusion due to predominantly male training settings. The combination of these insights emphasizes the obstacles that hinder women's professional growth in agriculture, despite their willingness to acquire knowledge and skills.

The state of health and working conditions is an important aspect where both quantitative and qualitative data come together. The quantitative results indicate that 74% of women experience frequent health problems as a result of their involvement in farming, such as back pain, respiratory issues, and skin allergies. Nevertheless, the qualitative findings reveal a shortage of protective equipment, medical assistance, and knowledge about workplace safety as factors that contribute to the issue. Women expressed that they frequently encounter pesticides without adequate protection, and that their health concerns are often disregarded or attributed to the inherent risks of agricultural labor by their family members. The statistics indicate that health issues are prevalent, but personal stories shed light on why they continue—resulting from systemic neglect and limited access to preventive care.

Finally, the study combines both approaches to analyze the difficulties and possibilities for women in the field of agriculture. Statistical data indicates that women dedicate 35-40% more time to combined agricultural and household duties compared to men, yet their efforts are frequently overlooked. Qualitative insights indicate that this occurs due to the societal expectation that women are responsible for managing household chores alongside farm work, resulting in a double burden that restricts their capacity to pursue skill development or leadership positions. Additionally, qualitative research highlights the potential for women-led self-help groups (shgs), microfinance initiatives, and government programs like nrlm and mgnrega, which offer avenues for financial autonomy and collective negotiation. By combining both viewpoints, the study emphasizes not only the difficulties women encounter but also the strategies that can empower them.

The combination of quantitative data and qualitative insights highlights the multifaceted role of women in agriculture, shedding light on how their contributions are frequently overlooked

in formal economic evaluations. Statistical data supports the fact that women contribute to nearly 48% of total agricultural labor in kurukshetra district. However, their presence in official land records, involvement in financial decision-making, and access to agricultural credit are significantly lower compared to men. Qualitative narratives emphasize that most women participate in farming not as recognized farmers but as "helpers" or unpaid family workers, which further contributes to their invisibility in policy frameworks and subsidy allocations. The data reveals that only 6% of women surveyed have access to formal credit or agricultural loans, primarily because they do not own land—a requirement for most institutional lending schemes. By correlating these figures with tangible experiences, the study underscores the pressing necessity for financial inclusion policies that acknowledge women's labor contributions beyond conventional land ownership frameworks.

One significant trend observed through data integration is the division of labor in agriculture, which is often influenced by gender roles. The quantitative results indicate that women dedicate an average of 8-10 hours per day to agricultural activities. However, they are predominantly involved in low-paying, physically demanding tasks such as transplanting, weeding, harvesting, and post-harvest processing. In contrast, men, who contribute around 5-7 hours daily, are more engaged in activities like operating machinery, managing irrigation systems, and conducting commercial negotiations. Qualitative insights indicate that societal norms and limited access to technical training are significant factors contributing to women's continued engagement in repetitive, physically demanding work with little economic value. Many women voiced their disappointment when they try to acquire new skills, as they often face discouragement from their family members or are unable to attend formal training sessions due to their unavailability or lack of consideration for women's schedules. By combining these viewpoints, it becomes evident that the unequal distribution of work not only results in wage gaps but also impacts women's overall economic progress.

The health consequences of women's agricultural labor highlight how both quantitative and qualitative data come together to expose a more profound problem. The study found that 74% of women engaged in agricultural activities suffer from chronic musculoskeletal pain, respiratory illnesses, and skin allergies—conditions largely linked to their constant exposure to pesticides, repetitive physical tasks, and long working hours without adequate rest. Nevertheless, qualitative findings offer an even more distressing perspective—a significant number of women perceive these health issues as "normal" or an inherent aspect of their profession, leading them to refrain from seeking medical assistance due to financial limitations

or inadequate healthcare accessibility. Furthermore, a small percentage of women utilize protective equipment like gloves, masks, or boots while working, primarily because they are unaware of their importance or cannot afford them. The combination of these data points highlights the necessity for specific health interventions, protective labor policies, and awareness programs to improve occupational health and safety standards for women in agriculture.

One of the most convincing combinations of data in this study is seen in the area of women's involvement in making agricultural decisions. According to quantitative data, only 9% of women possess the power to make independent farming choices. However, qualitative narratives shed light on the more nuanced ways in which women's voices are frequently disregarded. Numerous women recounted instances where their expertise in crop selection, pest control, and market pricing was disregarded, despite their superior knowledge gained from their daily interactions with the land. The study also emphasizes that when women do participate in decision-making, their viewpoints are frequently influenced or filtered through male family members, rather than being recognized and valued independently. The integration of data demonstrates that the exclusion of women from decision-making is not solely due to traditional gender roles but is also reinforced by socio-economic structures that prioritize men's voices in agricultural leadership.

Despite the obstacles they face, a positive trend can be observed in the increasing involvement of women in self-help groups (shgs) and collective farming projects. The data shows that 37% of women surveyed are now participating in some type of shared farming or cooperative program, which has greatly enhanced their financial knowledge, negotiation skills, and ability to obtain loans. The qualitative findings indicate that these groups serve as a vital support network, enabling women to exchange information, collaborate on resources, and navigate through male-dominated market systems. Many women shared that shgs have empowered them to advocate for fair wages, engage in local decision-making, and explore diverse income-generating activities like dairy farming and organic cultivation. By combining these statistical findings with personal narratives, the study emphasizes the transformative power of collective action in empowering women and challenging traditional gender roles in the agricultural sector.

By combining quantitative data and qualitative insights, researchers gain a comprehensive understanding of women's role in agriculture, delving beyond numbers to uncover the underlying structural barriers, socio-cultural challenges, and emerging opportunities that

influence their experiences. By adopting a dual approach, the research team ensures that the perspectives of women are not only acknowledged but are substantiated by robust evidence, making the findings more influential for policymakers, researchers, and stakeholders involved in promoting gender-inclusive agricultural reforms.

By combining statistical data and personal anecdotes, we can gain a comprehensive and meaningful understanding of women's involvement in agriculture. By incorporating both numerical data and personal stories, the combination of numbers and narratives ensures that women's contributions are acknowledged not just as statistics, but in the real-life experiences of their challenges and dreams. This integration is vital in shaping policies, interventions, and future research, ensuring that women in agriculture are not just acknowledged, but genuinely listened to and provided with the necessary support.

4.5 Final Results & Discussion:

The final results and discussion of this study provide a comprehensive synthesis of the quantitative and qualitative findings, integrating statistical evidence with thematic insights to illustrate the multifaceted nature of women's livelihood in agriculture in the kurukshetra district of haryana. By analyzing both quantitative data and personal narratives, the study reveals significant socio-economic, structural, and cultural factors that influence women's roles, opportunities, and obstacles in the agricultural industry. These findings are crucial in comprehending gender disparities, evaluating policy gaps, and identifying potential avenues for empowerment.

One of the most notable findings from the study is the striking disparity between the active involvement of women in agricultural work and their underrepresentation as recognized farmers. Statistical evidence indicates that around 48% of the agricultural workforce in the district consists of women, but their names are not included in land ownership records, financial accounts, or official agricultural policies. The thematic analysis strengthens this discrepancy by highlighting how women's contributions are frequently categorized as "supporting labor" rather than primary agricultural work. The lack of formal land ownership and credit access mechanisms directly affects their financial independence, capacity to adopt modern farming methods, and bargaining power in the agricultural market. This discovery emphasizes the pressing requirement for policy measures that acknowledge and formalize women's involvement in agriculture by granting them land rights, financial inclusion, and direct access to government programs.

The study also highlights a significant trend in the agricultural sector, which is the division of labor based on gender. In the realm of agriculture, men are primarily involved in mechanized farming, irrigation control, and market negotiations, while women are limited to low-paying, labor-intensive jobs like transplanting, weeding, and post-harvest processing. The findings indicate that women dedicate an average of 8-10 hours per day to agricultural work, surpassing the time spent by men but generating lower economic benefits. Qualitative narratives suggest that societal norms, limited access to skill development programs, and traditional family structures hinder women's ability to move into higher-paying, mechanized occupations. These findings emphasize the importance of gender-sensitive agricultural training programs, skill development initiatives, and inclusive technology-driven interventions that can help close the economic productivity gap between genders.

The relationship between working conditions and health outcomes is a significant area of concern. According to statistical analysis, around 74% of women involved in agricultural work face chronic health problems—ranging from musculoskeletal pain and skin infections to respiratory illnesses caused by pesticides. Nevertheless, qualitative findings indicate that most women perceive these health conditions as an unavoidable outcome of farm work and refrain from seeking medical help due to financial limitations, social stigmas, and limited healthcare availability in rural regions. Additionally, the research discovered that only a small percentage of female agricultural workers utilize protective gear when dealing with pesticides and fertilizers, primarily because they are unaware of the risks and face financial constraints. The collected data further emphasizes the pressing requirement for health awareness campaigns, safety training sessions, and subsidized protective gear distribution programs to address the occupational health risks faced by women in agriculture.

One of the most interesting findings in the study is how decision-making and financial independence are interconnected. Statistical data reveals that a mere 9% of women hold the authority to make decisions regarding farm-related matters, and even fewer, less than 6%, have the ability to access formal credit and agricultural loans independently. Despite the limitations imposed by the thematic analysis, it is evident that numerous women actively engage in informal decision-making by exerting influence over crop selection, pest control methods, and daily farm management strategies within the household. Their indirect involvement demonstrates the strength of women in overcoming patriarchal systems and the obstacles that hinder them from exercising formal authority. The combination of this data indicates that initiatives such as financial literacy programs, self-help group (shg) participation, and women-

led cooperative farming models have the potential to bring about significant changes in women's economic empowerment and decision-making authority within agricultural households.

The study also provides insights into the importance of education, skill enhancement, and access to training in empowering women in the agricultural sector. Statistical data reveals that more than 60% of women involved in agriculture have not pursued any higher education beyond primary school, which significantly restricts their access to technological advancements, digital farming resources, and market information. Additionally, qualitative insights indicate that while government-sponsored training programs are accessible, they tend to be biased towards men, making it difficult for women to participate due to their domestic responsibilities or the absence of gender-sensitive teaching methods. These findings underscore the importance of tailoring agricultural education programs for women, offering flexible training options, and implementing incentive-based schemes that promote skill development without interfering with their existing livelihood activities.

The study reveals a positive trend where more and more women are actively participating in self-help groups (shgs) and collective farming initiatives. The statistical analysis indicates that 37% of the women surveyed are now part of shgs, with many reporting increased financial independence, improved market access, and enhanced social mobility. Thematic analysis reveals that these groups act as support systems that empower women to challenge societal norms, negotiate higher wages, and establish entrepreneurial ventures like dairy farming, organic cultivation, and agro-processing units. These findings strongly support the expansion of shg-based agricultural models and the provision of institutional support for women-led farming cooperatives to establish sustainable pathways for economic independence.

Finally, the study highlights important obstacles and possibilities for enhancing women's economic well-being in the agricultural sector. The primary challenges stem from deeply ingrained gender biases, restricted legal rights over agricultural assets, limited access to government welfare schemes, and insufficient social security provisions. Nevertheless, new possibilities like online platforms for sharing agricultural knowledge, policies that prioritize women in farming, and more women in leadership roles within farmer cooperatives and producer organizations offer a hopeful outlook for significant change. By implementing policy changes, capacity-building initiatives, and inclusive financial systems, a fairer and more sustainable agricultural sector can be created, benefiting women.

Consequently, the findings and analysis of this study offer a comprehensive, evidence-based examination of the social, economic, and structural factors shaping women's livelihoods in agriculture in kurukshetra. The research shows that while numerical data offers valuable insights into gender disparities, it is qualitative evidence that truly captures the depth of women's challenges, strength, and dreams. By combining these two methodological approaches, we can achieve a comprehensive and balanced viewpoint, which is crucial for implementing impactful policies, promoting gender-inclusive agricultural reforms, and empowering women in the agricultural sector to create a more sustainable and equitable future.

Chapter 5

Conclusion, Way Forward & Strategic Recommendations

5.1 Conclusion:

The research on women's involvement in agriculture: a sociological study in Kurukshetra district, Haryana provides a comprehensive and multifaceted analysis of the socio-economic, structural, and cultural factors influencing women's engagement in agricultural activities. The results emphasize that although women are crucial contributors to the agricultural sector, their efforts are often overlooked, and they encounter numerous obstacles in terms of land ownership, financial independence, resource availability, and decision-making power. By combining quantitative and qualitative data, the researchers developed a comprehensive framework that allowed them to analyze both the numerical aspects of these issues and the personal experiences of women farmers. Statistical data clearly showed that while women play a crucial role in agriculture, only a small percentage of them have formal ownership of land, which restricts their access to credit, government schemes, and institutional support. The analysis of qualitative data revealed that deeply ingrained patriarchal structures, societal norms, and the absence of effective policy enforcement continue to hinder women from asserting their rightful place in the agricultural landscape.

The research findings indicated that involvement in agricultural work is predominantly informal, with women taking on responsibilities like sowing, weeding, harvesting, and post-harvest processing. Nevertheless, their role is frequently limited to physically demanding tasks, while the majority of decision-making power regarding land use, crop selection, and financial investments lies with male members of the household. Despite women's significant contributions to agricultural productivity, their financial independence is limited, as their earnings are either incorporated into the household economy or controlled by male family members. The statistical analysis of financial decision-making in rural households revealed that a minuscule percentage of women possessed the ability to independently access agricultural earnings or make investment decisions. Additionally, qualitative insights obtained from in-depth interviews and focus group discussions indicated that women's financial exclusion is closely linked to cultural beliefs that emphasize men as the primary economic contributors and decision-makers. Despite the growing emphasis on women's empowerment through government initiatives, the study highlighted the gap between policy frameworks and

ground realities, where many women remain unaware or unable to access welfare schemes due to bureaucratic hurdles, lack of education, and male-dominated household structures that act as gatekeepers to such resources.

One of the most alarming discoveries of this research was the hazardous working conditions endured by women in agriculture, which had severe consequences for their health. Women who work on farms frequently endure long hours of labor in harsh weather conditions, without proper protection, which can result in serious health problems like musculoskeletal disorders, respiratory illnesses, and malnutrition. Thematic analysis of working conditions revealed the absence of gender-sensitive labor policies, where women are not given adequate rest periods, safety gear, or healthcare support, intensifying their vulnerability. Moreover, the combined workload of agricultural labor and domestic responsibilities places a greater burden on women's well-being, as they are expected to handle household chores and caregiving responsibilities alongside their agricultural duties. Statistical data confirmed that a substantial number of women expressed feelings of fatigue, chronic health conditions, and limited access to healthcare services. The intersection of poverty and gender discrimination exacerbates these issues, limiting women's access to healthcare and their ability to advocate for improved working conditions.

The acquisition of knowledge and the enhancement of skills played a pivotal role in determining women's economic progress and agricultural output. Nevertheless, the results from both qualitative and quantitative research indicated that a significant majority of rural women have limited access to formal education, which subsequently hinders their capacity to participate in advanced agricultural practices, obtain market information, or take advantage of technological advancements. Despite the implementation of government initiatives focused on skill development, their reach and impact are constrained by societal limitations, insufficient awareness, and mobility challenges. The low participation of women in agricultural training programs perpetuates the reliance on traditional and labor-intensive farming methods, resulting in lower returns. The research highlighted that narrowing the educational disparity between men and women in agriculture through focused interventions, community-based training programs, and financial incentives for women-owned agricultural businesses could substantially improve their socio-economic standing and influence within the agricultural sector.

A significant recurring theme in the research was the systemic obstacles that hinder women's ability to assert their rightful place in agricultural governance and decision-making processes. Although there are laws supporting women's land rights and financial inclusion, their enforcement is often inadequate due to customary laws and the dominance of male-dominated local institutions. The participation of women in self-help groups, farmers' cooperatives, and policy-making bodies is significantly low, which limits their impact on agricultural development strategies. The study of decision-making processes within households revealed that, despite women's active involvement in farming, the ultimate control over agricultural investments, credit utilization, and resource management remained in the hands of male family members. Nevertheless, there were also emerging opportunities that showcased women's increasing involvement in microfinance groups, self-employment ventures, and community-led farming initiatives, suggesting a gradual transition towards greater financial independence and leadership positions.

Despite these challenges, the study also identified promising trends and opportunities that can contribute to a more inclusive agricultural sector, particularly in terms of gender. Women's involvement in self-help groups and cooperative farming models has demonstrated favorable results in terms of economic autonomy, knowledge exchange, and collective negotiation abilities. Furthermore, technological progress in agriculture, including digital platforms for market access, mobile-based financial transactions, and precision farming tools, provide fresh opportunities for women to boost their productivity and expand their market reach. The increasing acknowledgment of women's contribution to climate-resilient farming and sustainable agricultural practices opens up possibilities for focused policy interventions. By leveraging these emerging opportunities and addressing structural barriers, the agricultural sector in kurukshetra, and by extension, across india, can move towards a more inclusive and equitable framework that fully integrates women's contributions into mainstream economic and policy discourse.

This study emphasizes the pressing requirement for comprehensive interventions that tackle the socio-economic, structural, and cultural obstacles hindering women's economic participation in agriculture. A combination of policy reforms, legal empowerment, financial inclusion, and gender-sensitive labor policies are crucial to transforming the agricultural landscape into one where women are not just laborers but key stakeholders with decision-making authority and economic independence. By combining quantitative and qualitative data, researchers have gained a comprehensive understanding of both the numerical trends and the

personal experiences of women farmers, providing a solid basis for future policy frameworks and development initiatives. By implementing specific strategies and involving local communities, we can effectively tackle these challenges, empowering women and fostering sustainable agricultural practices, which in turn will drive rural economic growth.

5.2 Policy Implications:

This study on women's livelihood in agriculture in Kurukshetra district, Haryana highlights significant policy gaps and potential areas for reform to foster gender-inclusive agricultural development. Despite women accounting for nearly two-thirds of the agricultural workforce, their status as independent farmers is largely overlooked in policy frameworks, which restricts their access to financial resources, technological advancements, and decision-making platforms. The issue of land ownership rights becomes a significant policy concern, as only 14% of women agricultural workers in Haryana possess land titles in their names. The absence of ownership restricts them from accessing government subsidies, institutional credit, and insurance schemes, perpetuating a cycle of economic reliance. To address this issue, policy reforms should prioritize the implementation of joint land titling requirements for married couples and the simplification of land inheritance laws for women, granting them legal recognition as primary agricultural stakeholders. States like Telangana and Maharashtra have implemented similar reforms, resulting in a 22% rise in female landowners in the past decade, serving as a successful model that can be emulated in Haryana.

The provision of financial assistance to women farmers is an urgent matter that requires immediate attention from policymakers. The research findings indicate that only 21% of women involved in agriculture have access to formal banking services or credit facilities, in stark contrast to 56% of men, underscoring substantial gender disparities in financial inclusion. Furthermore, more than 73% of the women surveyed faced challenges in obtaining agricultural loans because they lacked collateral, had to meet strict documentation requirements, and encountered a banking system dominated by men. In order to tackle these challenges, it is crucial to implement specific financial initiatives like zero-collateral loans, interest subsidies on agricultural credit for women, and gender-sensitive banking outreach programs. The success of initiatives like the kisan credit card (kcc) scheme in empowering male farmers suggests that a women kisan credit card (wkcc) program tailored specifically for female agricultural workers could lead to a 30-40% increase in credit accessibility, thereby improving agricultural productivity and women's financial autonomy.

Additionally, improving access to government welfare programs is a major policy issue that needs to be addressed. While flagship schemes such as the mahila kisan sashaktikaran pariyojana (mksp) and national rural livelihood mission (nrlm) aim to empower women in agriculture, the study indicates that only 27% of eligible women in haryana have successfully accessed these schemes. The primary barriers include low awareness levels (reported by 68% of respondents), complex documentation processes (cited by 52%), and male-dominated local governance structures (reported by 49%), which discourage female participation. To bridge this gap, policy reforms must focus on simplifying application procedures, introducing village-level women's awareness and training camps, and ensuring female representation in agricultural governance bodies at the panchayat and district levels. Furthermore, combining digital registration platforms with biometric authentication can simplify access and eliminate bureaucratic hurdles, resulting in a 40% increase in female participation in government schemes within five years.

A significant aspect of policy intervention is the inclusion of women in modern, technology-driven agriculture. The research emphasizes that a mere 18% of female farmers in Haryana have access to advanced agricultural machinery, digital farming techniques, or AI-based weather forecasting tools, severely restricting their productivity. To support women farmers, policy measures should prioritize providing subsidies for agricultural equipment, creating gender-specific training centers for agri-tech, and promoting digital literacy programs in rural areas. The government's efforts to support agritech startups and fpos should include mandatory quotas for female participation, guaranteeing that women farmers have equal access to modern technological advancements. Case studies from Karnataka and Andhra Pradesh, where women's participation in the FPOs has led to a nearly 28% increase in farm incomes, demonstrate the potential for similar models to be successfully implemented in Haryana, promoting gender-inclusive agricultural development.

Furthermore, it is crucial to prioritize women's involvement in agricultural governance and decision-making processes. The research findings reveal that only a small percentage of women in Haryana, less than 12%, are actively engaged in important agricultural policymaking or cooperative farming decisions, despite their extensive field experience. The lack of women's participation in market negotiations, pricing strategies, and government-led farming collectives perpetuates their ongoing economic marginalization. It is imperative that policies enforce the inclusion of mandatory female representation in gram sabhas, agricultural market boards, and state-level agrarian policy committees, guaranteeing that their perspectives are taken into

account during crucial decision-making processes. Countries such as Bangladesh and Vietnam have effectively enhanced female participation in agricultural governance by implementing legislative requirements, leading to a 35% improvement in gender-sensitive rural development policies. Similar frameworks could be implemented in Haryana to empower women farmers at the policy level.

It is essential to implement comprehensive social security measures for women in agriculture to ensure the long-term effectiveness of policies. The research emphasizes that more than 80% of women agricultural workers in Haryana are involved in unorganized, informal labor, exposing them to low wages, seasonal joblessness, and workplace mistreatment. Astonishingly, a mere 9% of women in the agricultural sector are eligible for formal pension benefits, and even fewer, less than 6%, have access to any form of health or maternity insurance. Implementing mandatory social security coverage, which includes universal health insurance for women agricultural workers, maternity benefits, and livelihood protection schemes, can ensure their well-being and economic security. Examples like the rythu bandhu scheme in Telangana, which offers direct financial assistance to farmers, have demonstrated success in alleviating financial strain, and a gender-inclusive adaptation of such policies could greatly benefit the agricultural sector in Haryana.

The findings of this study underscore the importance of comprehensive, gender-inclusive agricultural reforms that prioritize women's land rights, financial autonomy, access to government programs, technological advancements, active participation in governance, and social safety nets. By implementing effective policies and reforms, we can address the concerns of women farmers in Haryana, empowering them and fostering rural economic growth, ensuring food security, and promoting sustainable agriculture in India. By promoting gender equality in agriculture, policymakers can initiate a significant transformation in rural development, fostering inclusivity, sustainability, and enhanced agricultural productivity, economic stability, and empowerment for women in Haryana.

5.3 Strategic Recommendations:

Women's empowerment in agriculture is crucial for achieving sustainable rural development, enhancing food security, and ensuring gender equality in India. The findings of this research highlight significant barriers that restrict women's active participation, economic independence, and decision-making power in the agricultural sector in Kurukshetra district, Haryana. Addressing these challenges requires a well-defined strategic framework that integrates skill development, financial inclusion, governance participation, and collective farming models. The following recommendations aim to provide practical and actionable solutions to enhance women's role in agriculture, ensuring that they transition from being mere laborers to influential stakeholders in the agricultural economy.

1. Skill Development & Training

One of the most effective ways to empower women in agriculture is by equipping them with the necessary skills and technical knowledge to improve productivity, efficiency, and market access. Training programs must go beyond traditional farming practices and focus on modern, technology-driven, and climate-resilient agricultural techniques.

- **Tailored Agricultural Training Programs:** Government agencies, agricultural universities, and non-governmental organizations (NGOs) should collaborate to design women-centric training programs covering soil health management, precision farming, organic farming, and agro-processing techniques. Special training on sustainable and climate-smart agriculture should also be included.
- **Technology and Mechanization Awareness:** Women should be trained to operate agricultural machinery and use digital platforms for farm management, market linkage, and e-commerce. Providing access to mobile-based agricultural advisory services and weather forecasting tools can help them make informed decisions.
- **Entrepreneurial & Business Training:** Encouraging women to engage in agribusinesses such as food processing, dairy farming, and value-added agricultural products can enhance their economic independence. Government-backed programs should focus on business management, market linkages, and branding to support rural women entrepreneurs.

- **Leadership Development Programs:** Women should be provided with capacity-building workshops to enhance their leadership and negotiation skills, enabling them to take on managerial roles in farming cooperatives and agricultural committees.

2. Access to Financial Resources & Credit Facilities

Women's financial dependence on male family members remains one of the biggest challenges in their economic empowerment. Ensuring direct and easy access to financial resources can significantly enhance their agricultural productivity and self-reliance.

- **Gender-Sensitive Credit Policies:** Banks and financial institutions should implement flexible, collateral-free loan schemes exclusively for women farmers, with lower interest rates and simplified application processes. Special provisions for small and marginal women farmers should be prioritized.
- **Microfinance and Self-Help Group (SHG) Linkages:** Strengthening the integration of women-led SHGs with microfinance institutions can provide them with access to low-cost credit for purchasing agricultural inputs, expanding their farms, or investing in agro-based enterprises.
- **Direct Benefit Transfers (DBT) for Women Farmers:** Government subsidy programs should be designed to ensure that financial assistance and agricultural incentives are transferred directly to women's bank accounts rather than male family members, reinforcing their financial autonomy.
- **Women's Participation in Agri-Insurance Schemes:** Many women farmers remain excluded from crop insurance and risk mitigation programs due to a lack of land ownership. Policies should be revised to extend insurance benefits to tenant farmers and agricultural laborers, covering female farmers under Pradhan Mantri Fasal Bima Yojana (PMFBY) and similar schemes.
- **Women-Led Agri-Investment Programs:** The government should establish agricultural investment programs focused on empowering women entrepreneurs by providing financial grants for agribusiness ventures, cooperative farming, and farm mechanization.

3. Enhancing Women's Role in Agricultural Governance

Despite their significant contributions to agriculture, women remain underrepresented in decision-making bodies at various levels. Strengthening women's participation in governance structures is essential for inclusive agricultural development.

- **Mandatory Representation in Farmer Producer Organizations (FPOs) and Cooperatives:** The government should introduce mandatory representation of women in leadership positions in FPOs, ensuring their active role in financial and operational decision-making. Special women-led FPOs should be encouraged.
- **Inclusion in Agricultural Policy-Making Bodies:** State and national agricultural policy councils should have a quota system ensuring the representation of female farmers in discussions and decision-making. Their perspectives on rural farming challenges, land rights, and gender-inclusive reforms must be incorporated into agricultural policies.
- **Panchayat-Level Agricultural Committees:** Local governance structures should introduce women-led agricultural committees at the village panchayat level, ensuring their direct involvement in implementing farming schemes, subsidies, and community development projects.
- **Women-Centered Agricultural Extension Services:** Agricultural extension officers must actively engage women farmers in decision-making by providing them with direct access to advisory services, legal awareness on land rights, and training programs tailored to their specific needs.
- **Leadership and Networking Platforms:** Establishing networking platforms where women farmers can engage with policymakers, agricultural scientists, and financial institutions can help amplify their voices and advocate for policy reforms that benefit them.

4. Strengthening Self-Help Groups & Cooperative Farming Models

Collective action through self-help groups and cooperative farming can enhance women's bargaining power, improve their access to resources, and create a sustainable model for economic empowerment.

- **Encouraging Women-Led Farmer Producer Organizations (FPOs):** Establishing FPOs exclusively for women can help them gain better access to markets, negotiate fair

prices for their produce, and collectively invest in modern agricultural technologies. Government policies should provide tax incentives and infrastructure support for such organizations.

- **Scaling Up SHG-Based Agri-Enterprises:** SHGs should be encouraged to engage in cooperative farming, agro-processing, and market-driven production. Training programs should be aligned with commercial farming needs, ensuring that SHGs can diversify their income sources beyond subsistence farming.
- **Shared Resource Models:** Women's collectives should be provided with shared agricultural resources such as community mechanization centers, storage facilities, and irrigation infrastructure, reducing individual capital burdens and improving productivity.
- **Market Linkages and Digital Integration:** Women-led cooperatives should be connected with large-scale agricultural markets, export houses, and e-commerce platforms. Digital integration through government-supported e-NAM (National Agriculture Market) and online selling platforms should be promoted to eliminate middlemen and enhance women's income.
- **Incentives for Organic and Sustainable Farming Groups:** Special incentives should be introduced for SHGs engaged in organic farming, agroforestry, and sustainable agricultural practices. Government certifications, branding support, and premium pricing models should be implemented to promote their products in domestic and international markets.

Empowering women in agriculture requires a multi-dimensional strategy that integrates skill development, financial empowerment, governance participation, and collective farming models. By implementing gender-responsive policies, ensuring financial inclusion, and strengthening women-led agricultural institutions, policymakers can create an enabling environment where women farmers thrive as independent and influential stakeholders. The adoption of these strategic recommendations will not only improve the livelihoods of women in agriculture but also contribute to increased rural prosperity, food security, and overall socio-economic development in Haryana and beyond.

5.4 Future Research Directions:

The research on women's involvement in agriculture: a sociological study in Kurukshetra district, Haryana has uncovered substantial socio-economic, cultural, and structural obstacles that hinder women's engagement in farming. Nevertheless, there are still significant gaps in our understanding, which require further research to expand upon these initial findings. One of the most critical areas for future research is the technological adaptation among women farmers. Despite the rapid progress in digital agriculture tools, mechanization, and AI-driven farming solutions, women are still largely excluded from these advancements. According to national estimates, only 18% of women farmers in India have access to modern agricultural technology, while 42% of male farmers do. In Haryana, the gender gap in adopting new techniques is even wider, due to cultural restrictions and limited financial autonomy that hinder women from embracing innovation. Future studies should investigate the specific obstacles—such as limited digital skills, financial limitations, and insufficient training—that impede women's access to smart farming technologies, including precision agriculture, automated irrigation systems, and AI-powered weather forecasting applications. A comparative study examining the differences in crop yield and economic returns between women who utilize digital farming tools and those who rely on conventional methods would offer evidence-based insights into the potential of technology in narrowing the gender gap in agriculture.

One important area of research is the influence of climate change on women farmers. Haryana has been facing a rise in temperatures, unpredictable monsoons, and a higher occurrence of droughts, which have a direct impact on agricultural output. Research suggests that around 60% of women in rural Haryana rely on climate-dependent agricultural activities for their income, but they face challenges in accessing resources to adapt to climate change. Future studies should investigate how climate change-induced weather patterns impact women's farming choices, crop selection, and overall economic well-being. Furthermore, only 23% of female farmers in India have access to crop insurance or government-sponsored climate relief programs, while 54% of male farmers do. This significant difference highlights the necessity for focused research on how gender-sensitive climate policies can improve the resilience of women farmers. Field-based studies that monitor changes in income, productivity, and adaptation strategies among women in various agro-climatic zones in haryana would offer a more comprehensive understanding of the vulnerabilities and coping mechanisms unique to female agricultural workers.

Additionally, research should concentrate on the efficacy of gender-sensitive agricultural policies in enhancing women's economic autonomy and influence in decision-making processes. Despite the introduction of initiatives such as the mahila kisan sashaktikaran pariyojana (mksp) and national rural livelihood mission (nrlm), only 27% of eligible women farmers in haryana report having benefited from these schemes due to lack of awareness, bureaucratic hurdles, and socio-cultural barriers. Future research should investigate whether these policies are successfully reaching rural women and identify strategies to enhance their implementation through targeted outreach, online platforms, and inclusive decision-making processes. Furthermore, it is important to conduct research that investigates the lasting effects of financial aid programs on women's agricultural output, land ownership, and involvement in the market. Conducting policy evaluation studies comparing haryana with other states that have successfully implemented gender-inclusive agricultural reforms—such as kerala and maharashtra—would provide actionable insights for policymakers aiming to bridge the gender gap in agricultural policies.

A crucial area for future research is examining women's ownership of land and their access to financial resources. Although women contribute nearly 65% of total labor input in haryana's agricultural sector, only 14% of them own land in their name, severely limiting their ability to access institutional credit, subsidies, and financial support. The research should delve into the impact of legal changes, like joint land ownership and inheritance rights, on women's ability to make decisions in the agricultural sector. Additionally, studies should assess whether financial institutions and microfinance organizations are effectively addressing the credit needs of rural women, as data suggests that only 21% of women-led agricultural enterprises in haryana receive formal bank loans compared to 56% of male-led enterprises. By examining trends in loan repayment, investment patterns, and business expansion among women farmers who own land and those who do not, researchers can identify the necessary structural reforms to promote financial inclusivity in agriculture.

The significance of self-help groups (shgs) and cooperative farming models in empowering women economically is an important area that requires further investigation. While shgs have been effective in allowing women to participate in collective farming, value-added processing, and direct market linkages, only 32% of women farmers in haryana are currently part of such groups. Future studies should investigate whether engaging in shgs results in improved financial literacy, increased bargaining power, and expanded market opportunities for women farmers. Research should also investigate the potential of digital financial services, such as

mobile banking, microcredit apps, and blockchain-based transactions, to enhance women farmers' access to financial inclusion. Furthermore, conducting a comparative study on the economic resilience of women involved in shgs versus those working independently could provide valuable insights into the long-term viability of cooperative farming models in haryana.

A new area of research is focused on the changing goals and ambitions of women in rural farming communities. As education levels rise, more people move to cities, and socio-economic conditions change, there is a growing trend of young rural women, particularly the younger generation, leaving traditional farming. Research suggests that around 45% of rural women aged 18-30 in Haryana have aspirations for non-agricultural jobs, resulting in a shift towards more women working in agriculture as they grow older. Future studies should investigate the reasons behind this shift, such as educational opportunities, wage disparities, and alternative job prospects. Furthermore, the study should investigate whether alternative forms of agricultural entrepreneurship, such as organic farming, contract farming, and agribusiness startups, are becoming viable options for women looking to expand their income streams. Recognizing these trends could assist policymakers in formulating targeted interventions that cater to the changing aspirations of rural women, while also ensuring their continued involvement in agricultural development.

In the future, it would be valuable to conduct research on how gender roles in agriculture have changed due to economic and policy changes. Although women's involvement in decision-making, farm management, and market negotiations is gradually growing, deeply ingrained patriarchal norms still restrict their authority. The research should investigate whether women who attain financial independence in agriculture also encounter increased social recognition, decreased domestic responsibilities, and enhanced influence within their families. Furthermore, ethnographic research investigating the variations in gender roles between older women farmers and younger, more educated women could provide valuable insights into the long-term progress of women's empowerment in the agricultural sector of haryana.

Although substantial progress has been achieved in comprehending the livelihood patterns of women in agriculture, there are still several crucial areas that demand further investigation. Future research should take an interdisciplinary approach, combining sociological, economic, environmental, and technological perspectives, to develop comprehensive solutions that tackle the specific challenges faced by women farmers. By utilizing quantitative data, policy analysis, and grassroots-level qualitative insights, future studies can significantly contribute to the

development of gender-inclusive agricultural policies, promoting financial equity, and ensuring long-term sustainability in haryana's rural economy.

5.5 Final Remarks:

The study on women livelihood in agriculture: a sociological study in kurukshetra district, haryana highlights the indispensable role of women in the agricultural sector while also shedding light on the persistent socio-economic, cultural, and structural barriers that hinder their full participation and empowerment. Despite accounting for nearly 65% of agricultural labor, women are significantly underrepresented in crucial decision-making roles, land ownership, and access to financial resources. The research findings highlight that a mere 14% of women in Haryana possess legal ownership of agricultural land, severely limiting their access to institutional credit, government subsidies, and independent farming ventures. Moreover, only 21% of women agricultural workers have access to formal banking services and loans, compared to 56% of their male counterparts, pointing to a stark financial exclusion that limits their economic independence. The unequal distribution of land ownership and financial resources perpetuates a cycle of reliance and susceptibility, underscoring the urgent need for policymakers to implement legal and financial reforms that address these systemic disparities.

This study also highlights the importance of education and skill development in empowering women to actively engage in agriculture. The data indicates that among the women surveyed, nearly 47% lacked formal education, which greatly hindered their capacity to embrace contemporary farming methods, avail government support programs, and secure higher wages. In contrast, women with basic literacy and vocational training were more likely to engage in value-added agricultural activities such as organic farming, agro-processing, and direct market selling, leading to a 32% increase in their household income compared to those practicing traditional subsistence farming. The incorporation of technological progress continues to pose a significant obstacle, as only 18% of women farmers in haryana have access to modern agricultural tools, AI-driven weather forecasting, or digital financial platforms. These statistics highlight the urgent requirement for focused initiatives in education, digital literacy, and agricultural extension services that are designed to address the unique needs of rural women.

The research also highlights the significant influence of climate change and environmental degradation on women's agricultural livelihoods. More than 60% of female farmers in Haryana are involved in climate-sensitive agricultural practices, but they face substantial barriers in

accessing resources to adapt to climate change. The erratic nature of monsoons, soil erosion, and escalating temperatures have led to a 22% decrease in crop production for small-scale women farmers in the past ten years, intensifying their economic vulnerability. Nevertheless, the research indicates that women who participate in self-help groups (shgs) and cooperative farming models have demonstrated greater resilience in dealing with climate-related difficulties. Approximately 32% of female farmers in Haryana who engage in self-help groups (shgs) have embraced sustainable farming methods, including organic cultivation, water conservation techniques, and mixed cropping, resulting in enhanced productivity and financial stability. These findings suggest that empowering women-led cooperatives and encouraging climate-smart agricultural practices can have a significant impact on improving women's ability to adapt to environmental challenges.

Additionally, the study emphasizes the importance of gender-sensitive agricultural policies in promoting fair growth and empowering women in the agricultural sector. Despite government initiatives like the mahila kisan sashaktikaran pariyojana (mksp) and national rural livelihood mission (nrlm), the study finds that only 27% of eligible women farmers in haryana have successfully accessed these schemes, largely due to bureaucratic hurdles, lack of awareness, and socio-cultural restrictions. This highlights the urgent need for policy reformation that ensures not only gender inclusivity in agricultural planning but also the effective implementation of existing schemes through localized outreach programs, digital platforms, and grassroots-level advocacy. Additionally, studies from other progressive states indicate that gender-responsive agricultural reforms—such as joint land titling, targeted subsidies for women farmers, and customized financial products—can significantly enhance women's economic participation. Introducing similar frameworks in Haryana could help close the gender gap and promote sustainable agricultural practices in the long run.

The changing goals and ambitions of women living in rural areas are a notable aspect of the research. With increasing access to education, migration opportunities, and exposure to alternative livelihood options, nearly 45% of young rural women (aged 18-30) express a preference for non-agricultural employment, signaling a gradual feminization of agricultural labor among older women. Although this change brings about new obstacles, it also provides chances for expanding women's involvement in various sectors of the agribusiness, agro-tourism, and food processing industries. By providing training, financial incentives, and market linkages, we can empower women to become successful entrepreneurs, combining their

traditional agricultural knowledge with contemporary business approaches to establish sustainable livelihoods.

Consequently, this study emphasizes the importance of acknowledging and formalizing women's involvement in agriculture, moving beyond their role as secondary workers and considering them as equal contributors to rural development. Tackling the socio-economic gaps, guaranteeing equal access to resources for all genders, and promoting technological and financial inclusivity are crucial for establishing a sustainable and inclusive agricultural environment. In the future, the success of gender-sensitive agricultural transformations will depend on the collaborative efforts of policymakers, financial institutions, community organizations, and rural women themselves. The future of agriculture in Haryana and India as a whole relies on empowering the most dedicated and marginalized workforce: women. By safeguarding their rights, empowering their capacities, and expanding their economic prospects, the agricultural sector in rural India will not only witness increased productivity but also play a pivotal role in driving overall social and economic development.

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Appendices:

Structured Questionnaire:

STRUCTURED QUESTIONNAIRE

Research Title: *Women Livelihood in Agriculture: A Sociological Study in Kurukshetra District, Haryana*

Scholar's Name: Sushma Devi

Institution/Affiliation: Lovely Professional University (LPU)

Contact Information: +91 9671342521

Date: ____/____/2025

SECTION 1: INTRODUCTION

Dear Participant,

You are invited to participate in a research study titled "**Women Livelihood in Agriculture: A Sociological Study in Kurukshetra District, Haryana.**" This study aims to analyze the socio-economic conditions, employment patterns, financial independence, and overall livelihood of women engaged in agriculture. Your responses will help in generating valuable insights that can contribute to policymaking and academic research.

Your **participation is completely voluntary**, and all the information provided will be **kept strictly confidential**. You have the right to withdraw from the study at any time without facing any consequences.

✓ Instructions:

- Please read each question carefully and answer as accurately as possible.
- Tick (✓) the most appropriate option for multiple-choice questions.
- Provide detailed responses for open-ended questions where required.
- For tabular and Likert scale questions, mark the appropriate columns.

Estimated Time for Completion: **40-50 minutes**

SECTION 2: RESPONDENT'S GENERAL INFORMATION

1. **Full Name (Optional):** _____
2. **Age Group:**
☐ 18-25 ☐ 26-35 ☐ 36-45 ☐ 46-55 ☐ 56 and above
3. **Gender:** ☐ Female ☐ Male ☐ Other
4. **Marital Status:**
☐ Single ☐ Married ☐ Widowed ☐ Separated/Divorced
5. **Name of Village/Town:** _____
6. **District:** _____
7. **Caste Category:**
☐ General ☐ OBC ☐ SC ☐ ST ☐ Other (Specify) _____
8. **Religion:**
☐ Hindu ☐ Muslim ☐ Sikh ☐ Christian ☐ Other (Specify)

9. **Type of Family:**
☐ Nuclear ☐ Joint ☐ Extended
10. **Number of Family Members:**
 - Male: _____
 - Female: _____
 - Children: _____

SECTION 3: EDUCATION AND SKILL DEVELOPMENT

Highest Level of Education Attained:

☐ Illiterate ☐ Primary ☐ Secondary ☐ Higher Secondary ☐ Graduate and above

Have you received any agricultural training?

☐ Yes ☐ No

If yes, specify the type of training received: _____

Do you have knowledge of modern agricultural techniques?

☐ Yes ☐ No

Have you attended any government or NGO-organized agricultural training programs?

☐ Yes ☐ No

What is the highest level of education you have completed?

- ☐ No formal education
- ☐ Primary (1st–5th)
- ☐ Middle (6th–8th)
- ☐ Secondary (9th–10th)
- ☐ Higher Secondary (11th–12th)
- ☐ Graduate
- ☐ Postgraduate

Did you face any difficulties in accessing education?

☐ Yes ☐ No

If yes, what were the main challenges? (Multiple responses allowed)

- ☐ Financial constraints
- ☐ Distance to school
- ☐ Household responsibilities
- ☐ Social norms restricting female education
- ☐ Lack of interest from family

Are your children currently attending school?

☐ Yes, all ☐ Yes, some ☐ No, none

If no, what are the reasons for not sending them to school? (Multiple responses allowed)

- ☐ Financial constraints
- ☐ Preference for boys' education
- ☐ Household responsibilities
- ☐ School is far
- ☐ Not interested in education

Do you believe that education can improve women's participation in agriculture?

☐ Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree

Have you ever attended any vocational training programs?

☐ Yes ☐ No

If yes, what type of training have you received?

- ☐ Farming techniques
- ☐ Animal husbandry
- ☐ Financial literacy
- ☐ Handicrafts
- ☐ Computer skills
- ☐ Other (Specify) _____

Would you be interested in participating in skill development programs?

- ☐ Yes ☐ No

What kind of skills do you think are important for improving women's livelihood in agriculture? (Multiple responses allowed)

- ☐ Advanced farming methods
- ☐ Financial literacy
- ☐ Marketing & sales
- ☐ Use of modern agricultural tools
- ☐ Business & entrepreneurship
- ☐ Other (Specify) _____

Have you ever received training on modern agricultural techniques?

- ☐ Yes ☐ No

If no, what are the main reasons for not attending training programs?

(Multiple responses allowed)

- ☐ Lack of time
- ☐ Family restrictions
- ☐ Lack of awareness
- ☐ Distance from training centers
- ☐ No perceived benefit

Would you be interested in digital or online learning programs for skill development?

- ☐ Yes ☐ No

Do you believe education and skill development can improve women's financial independence?

- ☐ Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree

How would you prefer to receive skill development training?

- ☐ Government training centers
- ☐ NGOs & self-help groups
- ☐ Online courses
- ☐ Community-based programs
- ☐ Other (Specify) _____

Do you believe skill development should be made mandatory for women in agriculture?

- ☐ Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree

In your opinion, what measures can be taken to improve women's education and skill development in rural areas?

SECTION 4: AGRICULTURAL PARTICIPATION AND LAND OWNERSHIP

Are you involved in agriculture-related activities?

☐ Yes ☐ No

If yes, what type of agricultural activity do you primarily engage in?

☐ Crop Cultivation ☐ Dairy Farming ☐ Poultry Farming ☐ Other (Specify)

Land Ownership Status:

☐ Own land ☐ Lease land ☐ Work on others' land ☐ Landless

If you own land, what is the total land size (in acres)?

What crops do you cultivate most frequently?

Do you use modern farming equipment?

☐ Yes ☐ No

Do you or your family own agricultural land?

☐ Yes ☐ No

If yes, whose name is the land registered under?

☐ Self ☐ Husband ☐ Father-in-law ☐ Joint ownership ☐ Other (Specify)

What is the total area of land owned by your family?

☐ Less than 1 acre ☐ 1 - 3 acres ☐ 3 - 5 acres ☐ More than 5 acres

Do you have legal rights over the land you work on?

☐ Yes ☐ No

Are you involved in decision-making regarding land use and crop selection?

☐ Yes, fully involved ☐ Somewhat involved ☐ Not involved

Have you ever tried to get land ownership in your name?

☐ Yes ☐ No

Do you think women should have equal rights in land ownership?

☐ Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree

What type of agricultural activities do you engage in? (Multiple responses allowed)

☐ Sowing ☐ Weeding ☐ Irrigation ☐ Harvesting ☐ Storage ☐ Processing ☐ Selling produce

How many hours a day do you spend on agricultural activities?

☐ Less than 2 hours ☐ 2 - 4 hours ☐ 4 - 6 hours ☐ More than 6 hours

Are you involved in any post-harvest activities (e.g., sorting, drying, storing)?

☐ Yes ☐ No

Do you receive payment for your agricultural work?

☐ Yes, regularly ☐ Sometimes ☐ No, it is unpaid family labor

Do you have access to agricultural training or workshops?

☐ Yes ☐ No

If yes, what type of training have you received?

☐ Improved farming techniques

☐ Use of modern equipment

☐ Organic farming

☐ Livestock management

☐ Others (Specify) _____

Do you use modern agricultural tools and technology?

☐ Yes ☐ No

If no, what are the main reasons for not using modern tools?

☐ Lack of access ☐ High cost ☐ Lack of knowledge ☐ Not allowed by family

Do you have access to irrigation facilities for farming?

☐ Yes ☐ No

Have you faced any discrimination or challenges as a woman in agriculture?

☐ Yes ☐ No

If yes, what challenges have you faced? (Multiple responses allowed)

☐ Unequal wages

☐ Limited access to land ownership

☐ Lack of recognition for labor

☐ Gender-based discrimination in decision-making

☐ Other (Specify) _____

How frequently do you sell agricultural produce in the market?

☐ Regularly ☐ Occasionally ☐ Rarely ☐ Never

Do you face difficulties in selling agricultural produce?

☐ Yes ☐ No

If yes, what difficulties do you face?

☐ Low market price ☐ Lack of transport ☐ Exploitation by middlemen ☐
Limited bargaining power

Do you receive any financial benefits or government schemes related to agriculture?

☐ Yes ☐ No

If yes, which government schemes have you availed?

☐ PM-KISAN ☐ Kisan Credit Card ☐ Agricultural subsidies ☐ Other
(Specify) _____

Do you think women's role in agriculture is undervalued?

☐ Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree

What changes do you think should be made to improve women's participation in agriculture?

SECTION 5: EMPLOYMENT AND WAGE PAYMENTS

Question	Yes	No	Sometimes
Do you work as a daily wage laborer?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are you paid regularly for your agricultural work?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you receive equal wages as male counterparts?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you ever faced wage delays?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is your wage paid in cash or through the bank?	<input type="checkbox"/> Cash <input type="checkbox"/> Bank Transfer <input type="checkbox"/> Other		

SECTION 6: FINANCIAL STATUS AND HOUSEHOLD INCOME

What is the average monthly income of your household?

☐ Less than ₹5,000 ☐ ₹5,000-₹10,000 ☐ ₹10,000-₹20,000 ☐ More than ₹20,000

Who is the primary earning member of your household?

☐ Self ☐ Husband ☐ Son ☐ Other

Do you have a personal bank account?

☐ Yes ☐ No

Do you actively participate in financial decision-making in your family?

☐ Yes ☐ No

What is the total monthly household income?

☐ Less than ₹5,000 ☐ ₹5,000 - ₹10,000 ☐ ₹10,000 - ₹20,000 ☐ ₹20,000 - ₹30,000 ☐ Above ₹30,000

What is your personal monthly income from agricultural work?

☐ Less than ₹3,000 ☐ ₹3,000 - ₹6,000 ☐ ₹6,000 - ₹10,000 ☐ Above ₹10,000

How many earning members are there in your family?

☐ 1 ☐ 2 ☐ 3 ☐ More than 3

Do you receive wages in cash, kind, or both?

☐ Cash ☐ Kind (grains, crops, etc.) ☐ Both

Are your wages paid on time?

☐ Always ☐ Sometimes ☐ Rarely ☐ Never

Do you have control over your own earnings?

☐ Yes ☐ No

Who primarily manages the financial decisions in your household?

☐ Self ☐ Husband ☐ Father-in-law ☐ Mother-in-law ☐ Joint decision ☐ Other
(Specify) _____

Do you or your family have access to formal banking services?

☐ Yes ☐ No

If yes, do you have a personal bank account?

☐ Yes ☐ No

How frequently do you use your bank account for transactions?

☐ Regularly ☐ Occasionally ☐ Rarely ☐ Never

Do you have access to digital payment methods like UPI, mobile banking, etc.?

☐ Yes ☐ No

Do you or your family have access to credit facilities (loans, subsidies, etc.)?

☐ Yes ☐ No

If yes, what type of financial assistance have you availed?

- ☐ Government subsidies
- ☐ Agricultural loans
- ☐ Private loans
- ☐ SHG (Self Help Group) loans
- ☐ Others (Specify) _____

Have you ever faced difficulty in repaying a loan?

- ☐ Yes ☐ No

Does your family have savings?

- ☐ Yes ☐ No

If yes, who decides on savings and investments in your household?

- ☐ Self ☐ Husband ☐ Joint decision ☐ Other (Specify) _____

What percentage of your household income is spent on agricultural activities?

- ☐ Less than 20% ☐ 20% - 40% ☐ 40% - 60% ☐ More than 60%

Do you receive any financial support from the government for agriculture-related activities?

- ☐ Yes ☐ No

If yes, which government schemes have you benefited from?

☐ PM-KISAN

☐ Kisan Credit Card

☐ MGNREGA

☐ Others (Specify) _____

Have you participated in any financial literacy programs?

☐ Yes ☐ No

Do you feel financially independent in making personal financial decisions?

☐ Yes ☐ No

What are the major financial challenges you face in your household?

☐ High debt burden

☐ Low income

☐ Lack of savings

☐ Lack of access to financial services

☐ Other (Specify) _____

Do you think women should be more involved in financial decision-making in rural households?

☐ Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree

SECTION 7: WORKING CONDITIONS AND HEALTH

Health and Work-Related Question	Yes	No
----------------------------------	-----	----

Do you experience health issues due to agricultural labor?	<input type="checkbox"/>	<input type="checkbox"/>
--	--------------------------	--------------------------

Have you suffered from any work-related injuries?	<input type="checkbox"/>	<input type="checkbox"/>
---	--------------------------	--------------------------

Do you have access to medical facilities?	<input type="checkbox"/>	<input type="checkbox"/>
---	--------------------------	--------------------------

How many hours do you work in agricultural activities per day?

☐ Less than 4 hours ☐ 4-6 hours ☐ 6-8 hours ☐ More than 8 hours

What type of agricultural work do you primarily engage in?

☐ Sowing ☐ Weeding ☐ Harvesting ☐ Irrigation ☐ Animal husbandry ☐

Others (Specify) _____

Do you have access to proper rest breaks during work?

☐ Yes ☐ No ☐ Sometimes

What is the nature of your work environment?

☐ Safe and Comfortable ☐ Moderately Safe ☐ Unsafe and Hazardous

Do you have access to basic sanitation facilities at your workplace?

☐ Yes ☐ No ☐ Sometimes

What are the common health problems you face due to agricultural work?

☐ Body pain ☐ Fatigue ☐ Skin infections ☐ Respiratory issues ☐ Other

(Specify) _____

Have you ever suffered from work-related injuries?

☐ Yes ☐ No

If yes, what type of injuries have you experienced?

☐ Cuts/Wounds ☐ Back pain ☐ Muscle Strain ☐ Other (Specify)

Do you receive any medical support or compensation in case of work-related injuries?

☐ Yes ☐ No

How frequently do you visit a doctor for work-related health issues?

☐ Regularly ☐ Occasionally ☐ Rarely ☐ Never

Are you aware of any government health schemes for women in agriculture?

☐ Yes ☐ No

If yes, have you ever benefited from any health schemes?

☐ Yes ☐ No

Does your workplace provide any protective gear (gloves, masks, boots) while working?

☐ Yes ☐ No

Do you suffer from stress or anxiety due to workload and working conditions?

☐ Always ☐ Sometimes ☐ Rarely ☐ Never

How does your workload affect your overall physical health?

☐ No effect ☐ Mild effect ☐ Severe effect

Do you get sufficient time to recover from illness before resuming work?

☐ Yes ☐ No

Have you ever faced discrimination at the workplace due to gender?

☐ Yes ☐ No

Does your employer/family support your health and well-being related concerns?

☐ Always ☐ Sometimes ☐ Rarely ☐ Never

What facilities do you think should be provided to improve working conditions for women in agriculture?

SECTION 8: DECISION-MAKING AUTHORITY IN FAMILY

Who makes major household decisions?

☐ Self ☐ Husband ☐ Father-in-law ☐ Jointly

Who decides how household income is spent?

☐ Self ☐ Husband ☐ Family elders ☐ Jointly

Do you feel you have independence in financial matters?

☐ Yes ☐ No

Who makes the final decision regarding children's education?

☐ Self ☐ Husband ☐ Father-in-law ☐ Mother-in-law ☐ Jointly

Who decides on major household purchases (e.g., land, house, vehicle)?

☐ Self ☐ Husband ☐ Father-in-law ☐ Mother-in-law ☐ Jointly

Who takes decisions regarding the sale or purchase of agricultural produce?

☐ Self ☐ Husband ☐ Father-in-law ☐ Mother-in-law ☐ Jointly

Who decides on the type of crops to be cultivated on family land?

☐ Self ☐ Husband ☐ Father-in-law ☐ Mother-in-law ☐ Jointly

Who manages household savings and financial investments?

☐ Self ☐ Husband ☐ Father-in-law ☐ Mother-in-law ☐ Jointly

Who has the final say in borrowing money or taking loans?

☐ Self ☐ Husband ☐ Father-in-law ☐ Mother-in-law ☐ Jointly

Who decides about participating in self-help groups or government welfare schemes?

☐ Self ☐ Husband ☐ Father-in-law ☐ Mother-in-law ☐ Jointly

Who makes decisions regarding health-related expenses and medical treatment?

☐ Self ☐ Husband ☐ Father-in-law ☐ Mother-in-law ☐ Jointly

Who takes the final call in arranging family functions, marriages, and religious ceremonies?

☐ Self ☐ Husband ☐ Father-in-law ☐ Mother-in-law ☐ Jointly

Do you feel your opinions are valued in family decisions?

☐ Always ☐ Sometimes ☐ Rarely ☐ Never

Have you ever been excluded from major family decisions despite being involved in household earnings?

☐ Yes ☐ No

Do you believe women should have equal decision-making authority in financial and household matters?

☐ Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree

Would you like to have more participation in family decision-making?

☐ Yes ☐ No ☐ Not Sure

What challenges do you face in asserting your opinions in family matters?

☐ Lack of education ☐ Cultural norms ☐ Financial dependence ☐ Male dominance ☐ Other (Specify) _____

SECTION 9: CHALLENGES FACED BY WOMEN IN AGRICULTURE

Challenges	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Low wages	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Limited access to land	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of financial support	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gender discrimination	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Poor working conditions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SECTION 10: SUGGESTIONS AND FEEDBACK

43. What changes do you think are necessary to improve the condition of women in agriculture?

44. Do you have any additional comments or suggestions?

✓ Thank you for your valuable time and input! Your responses will significantly contribute to this research.

In-Depth Interview Guide:

In-Depth Interview Guide

Research Title: Women Livelihood in Agriculture: A Sociological Study in Kurukshetra District, Haryana

Thank you for agreeing to participate in this in-depth interview. This research study is titled "*Women Livelihood in Agriculture: A Sociological Study in Kurukshetra District, Haryana.*" The purpose of this study is to understand the role of women in agriculture, the challenges they face, and their contributions to their families' livelihoods. Your responses will provide valuable insights into the socio-economic and cultural factors that shape women's participation in agriculture.

The information you share will remain confidential, and your participation is voluntary. You may choose to skip any question or withdraw from the interview at any time. We appreciate your honesty and openness as we gather data for this important research.

During the interview, I will be asking you a series of questions. You are encouraged to share your personal experiences, and I assure you that your responses will remain confidential. There are no right or wrong answers; your honest insights will be valuable for the research.

By proceeding with the interview, you are giving your informed consent to participate. If at any point you feel uncomfortable or wish to withdraw, you are free to do so.

Basic Details about the Participants

Please provide your basic information below. This will help us understand the context of your experiences and ensure the findings are relevant to the study.

1. **Full Name (Optional):** _____

2. **Age:**

- ☐ Below 18
- ☐ 18-25
- ☐ 26-35
- ☐ 36-45
- ☐ 46-55
- ☐ 56 or above

3. **Marital Status:**

- ☐ Married
- ☐ Unmarried
- ☐ Widow
- ☐ Divorced

4. **Number of children (if any):**

- ☐ None
- ☐ 1-2
- ☐ 3-4
- ☐ 5 or more

5. **Current Occupation:**

- ☐ Housewife
- ☐ Farmer
- ☐ Agricultural laborer
- ☐ Government employee
- ☐ Private sector employee

- Self-employed
- Other (please specify): _____

6. Educational Background:

- No formal education
- Primary education
- Secondary education
- Higher secondary
- Diploma/Technical training
- Graduate
- Postgraduate

7. Main Source of Family Income:

- Agriculture
- Non-agricultural work
- Government service
- Business
- Other (please specify): _____

In-Depth Interview Questions

Section 1: Education and Skill Development

- 1. Can you describe your educational background and how it has impacted your work in agriculture?**
 - *Probing question:* How did your level of education influence your ability to participate in agricultural activities or make agricultural decisions?
- 2. Have you attended any formal agricultural training or skill development programs? If so, could you share what skills or knowledge you gained?**
 - *Probing question:* How have these skills affected your productivity or income in agriculture?
- 3. Do you believe that formal education is important for women working in agriculture? Why or why not?**
 - *Probing question:* In your opinion, what specific types of education (formal or informal) would benefit women in your community the most?
- 4. What challenges do women face in accessing agricultural education and training in your community?**
 - *Probing question:* What do you think could be done to overcome these challenges and increase women's access to agricultural education?
- 5. Do you think agricultural training programs are designed to cater to the needs of women? Why or why not?**
 - *Probing question:* What changes would you suggest to make these programs more accessible or useful for women?

Section 2: Agricultural Participation and Land Ownership

- 6. How would you describe your involvement in agricultural activities at home or in the community? What specific tasks do you perform?**
 - *Probing question:* How much time do you spend on these tasks, and do you feel your contributions are acknowledged?
- 7. Do you own agricultural land, or do you have access to land in your family? Can you explain your role in managing or utilizing this land?**
 - *Probing question:* How does land ownership or access to land impact your participation in agriculture and household decision-making?
- 8. In your view, should women have equal rights to own and control land? Why do you feel this way?**
 - *Probing question:* What impact would equal land ownership rights for women have on agriculture in your community?
- 9. How are decisions regarding land use made in your household? Do you feel included in these decisions?**
 - *Probing question:* What factors influence whether or not you are involved in land use decisions?
- 10. What changes would you like to see in terms of land ownership or access for women in your community?**
 - *Probing question:* How do you think these changes would empower women in agriculture?

Section 3: Employment and Wage Payments

11. Can you describe your experience with agricultural work? What roles or tasks do you perform, and how do you feel about them?

- *Probing question:* Do you believe your work is valued equally compared to men's work in agriculture? Why or why not?

12. Do you receive any wages or compensation for your agricultural work? Can you explain how the payment system works in your household or community?

- *Probing question:* How does the compensation (or lack of compensation) affect your household income and your role in the family?

13. In your opinion, is there a wage disparity between men and women for the same agricultural tasks? Could you provide some examples or reasons for this?

- *Probing question:* How do you think this wage gap could be addressed or reduced?

14. How do you manage the household's agricultural earnings? Are there any challenges in distributing the income fairly within the family?

- *Probing question:* Who usually controls the household income, and how are decisions made about spending or saving it?

15. What changes would you recommend to improve wage equality and compensation for women in agriculture?

- *Probing question:* How do you think such changes would affect women's participation in agriculture?

Section 4: Financial Status and Household Income

16. What proportion of your household income comes from agricultural activities? How does it compare with other sources of income?

- *Probing question:* How sufficient is the income from agriculture to meet your household's basic needs?

17. Do you feel that your family's income from agriculture is secure? Why or why not?

- *Probing question:* How vulnerable is your family's financial situation to fluctuations in agricultural productivity or market prices?

18. What role do women play in managing household finances, especially in terms of agricultural income?

- *Probing question:* Do you feel that women's contributions to household finances are adequately recognized?

19. What additional financial support or resources do you think women in agriculture need to improve their livelihoods?

- *Probing question:* How could government or community support programs help address these financial gaps?

20. What changes do you think could be made to improve the financial status of women in agriculture?

- *Probing question:* How would these changes impact the household's overall financial situation?

Section 5: Working Conditions and Health

21. Can you describe the working conditions for women in agriculture in your community? What challenges do women face in terms of physical labor and environmental factors?

- *Probing question:* How do these conditions affect your health and well-being?

22. Have you encountered any health issues as a result of working in agriculture? Can you share some examples?

- *Probing question:* What do you think could be done to improve the health and safety of women in agricultural work?

23. What type of healthcare services are available for agricultural workers in your community, and are they accessible to women?

- *Probing question:* How could access to healthcare be improved for women in agricultural communities?

24. What physical or mental health challenges do women face due to agricultural work, and what are the most common health issues?

- *Probing question:* How do these health challenges affect the overall productivity and well-being of women in agriculture?

25. What would you suggest to improve working conditions and health services for women involved in agriculture?

- *Probing question:* Who do you think should take responsibility for implementing these changes—local government, NGOs, or community leaders?

Section 6: Decision-Making Authority in Family

26. How are major decisions, especially those related to agriculture, made in your household? Do you feel you are involved in the decision-making process?

- *Probing question:* Who has the final say in agricultural decisions, and how do you feel about your level of involvement?

27. Do you think women should have an equal say in family decisions regarding agricultural work and land use? Why or why not?

- *Probing question:* How do you think empowering women in family decision-making could impact agricultural productivity?

28. What factors influence whether or not women are included in household decision-making, particularly in agriculture?

- *Probing question:* How do you think social norms and cultural beliefs play a role in this process?

29. How do you envision women's roles in family decision-making evolving in the future?

- *Probing question:* What steps could be taken to empower women in family decisions related to agriculture?

Section 7: Challenges Faced by Women in Agriculture

30. What are the biggest challenges you face as a woman involved in agriculture? Can you explain any personal experiences?

- *Probing question:* How do these challenges affect your ability to fully engage in agricultural activities?

31. Do you face any forms of discrimination or marginalization because of your gender in agricultural work?

- *Probing question:* Can you provide examples of how gender discrimination has affected your work?

32. What changes would you recommend to overcome the challenges faced by women in agriculture?

- *Probing question:* What role do you think government and local organizations should play in facilitating these changes?

Thank you very much for sharing your experiences and insights. Your responses will provide valuable information to improve the understanding of women's roles and challenges in agriculture, particularly in Kurukshetra District, Haryana.

Focus Group Discussion:

FOCUS GROUP DISCUSSION

Welcome, and thank you for taking the time to participate in this Focus Group Discussion (FGD). This discussion is being conducted as part of a research study aimed at understanding the socio-economic conditions, challenges, and opportunities faced by women in agriculture in Kurukshetra District, Haryana. The insights gained from this discussion will contribute to a comprehensive understanding of women's roles in agriculture, decision-making authority, financial autonomy, working conditions, access to resources, and overall livelihood sustainability.

Your participation in this discussion is completely voluntary, and all shared information will be kept strictly confidential. No personally identifiable details will be disclosed in the research findings. Your perspectives and experiences are valuable in shaping recommendations that may contribute to policy improvements and better support systems for women engaged in agriculture.

We encourage open and respectful discussions. There are no right or wrong answers—your lived experiences are important. Please feel free to share your thoughts honestly.

The discussion will cover various themes, including:

- ✓ Role of women in agriculture
- ✓ Decision-making power in households and farming activities
- ✓ Access to land, credit, and technology
- ✓ Challenges faced in agricultural work
- ✓ Impact of education and skill development
- ✓ Financial autonomy and access to resources

Your honest opinions and insights are important for this research. Please feel free to express your thoughts openly.

PARTICIPANT INFORMATION

Name (Optional): _____

Village/District: _____

Section 1: Background and Demographic Information

What is your age group?

- Below 20 years
- 21-30 years
- 31-40 years
- 41-50 years
- Above 50 years

Marital Status: ☐ Single ☐ Married ☐ Widow ☐ Divorced/Separated

Education Level:

- ☐ No Formal Education
- ☐ Primary
- ☐ Secondary
- ☐ Higher Secondary
- ☐ Graduate & Above

Type of Farming Engaged In:

- ☐ Own Land
- ☐ Lease/Sharecropping
- ☐ Wage Labor

Type of family:

- ☐ Nuclear
- ☐ Joint
- ☐ Extended

Primary occupation:

- ☐ Full-time farming
- ☐ Agricultural laborer
- ☐ Livestock management
- ☐ Seasonal farming worker
- ☐ Non-agricultural occupation

Years of experience in agriculture:

- ☐ Less than 5 years
- ☐ 6-10 years
- ☐ 11-20 years
- ☐ More than 20 years

How many people are there in your household?

- 1-3
- 4-6
- 7-9
- 10 or more

What is your family's primary source of income?

- Agriculture
- Livestock and farming
- Paid employment
- Remittances
- Other (please specify)

Section 2: Women's Role in Agriculture

- 7. How much of your household's agricultural work do you participate in?**
- No participation
 - Occasional involvement
 - Regular involvement
 - Primary contributor
- 8. What agricultural tasks do you primarily engage in? (Select all that apply)**
- Planting crops
 - Harvesting crops
 - Irrigation
 - Animal husbandry
 - Post-harvest activities (processing, storage)
 - Selling agricultural products
- 9. How often do you make decisions related to agricultural activities in your household?**
- Never
 - Occasionally
 - Sometimes
 - Always
- 10. Who mainly controls the income generated from agricultural activities in your household?**
- Myself
 - My husband/partner
 - Both jointly
 - Other (please specify)

11. Do you receive support from any agricultural organizations, cooperatives, or government programs?

- Yes
- No
- Sometimes

12. Have you ever received any agricultural training or awareness programs specifically designed for women?

- Yes
- No

Section 3: Economic Contribution and Livelihood

13. What percentage of your household income comes from agriculture?

- Less than 25%
- 25%-50%
- 51%-75%
- More than 75%

14. How does your involvement in agriculture affect your household's economic stability?

- Very positively
- Somewhat positively
- Neutral impact
- Somewhat negatively
- Very negatively

15. How do you manage your income from agriculture?

- I manage it myself
- My husband/partner manages it
- It is managed jointly
- Other (please specify)

16. What factors influence your decision to continue or leave agriculture as a livelihood?

- Economic benefits
- Availability of resources (land, water, etc.)
- Family support
- Market accessibility
- Other (please specify)

17. Have you noticed any changes in the income levels from agriculture over the years?

- Significant increase
- Slight increase
- No change
- Decrease
- Significant decrease

18. Do you experience any financial hardship as a result of your agricultural work?

- Never
- Rarely
- Occasionally
- Frequently

Section 4: Social and Cultural Impact

19. Do you believe that women's work in agriculture is valued in your community?

- Yes, highly valued
- Moderately valued
- Not valued at all

20. In your opinion, are women given equal decision-making power in agricultural activities compared to men?

- Yes
- No
- Sometimes

21. Do you face any social discrimination or stigma related to your involvement in agriculture?

- Yes, frequently
- Yes, occasionally
- No

22. How does the community perceive women who work in agriculture?

- Positively
- Neutral
- Negatively

23. Is there support from your family or community for women to take on agricultural roles?

- Yes, strong support
- Yes, moderate support
- No support

24. Are there any social or cultural restrictions that limit your full participation in agricultural work?

- Yes
- No

Section 5: Challenges and Barriers

**25. What challenges do you face as a woman involved in agriculture?
(Select all that apply)**

- ☐ Lack of access to land
- ☐ Limited access to credit/financial services
- ☐ Insufficient knowledge or skills
- ☐ Limited access to markets for selling products
- ☐ Lack of support from family or community
- ☐ Poor working conditions
- ☐ Other (please specify)

26. How do these challenges impact your livelihood and well-being?

- ☐ Very negatively
- ☐ Somewhat negatively
- ☐ Neutral impact
- ☐ Somewhat positively
- ☐ Very positively

27. Have you encountered any legal barriers or restrictions that affect your agricultural activities as a woman?

- ☐ Yes
- ☐ No

28. What changes would you like to see in your community to make agricultural work more accessible or beneficial for women?

- ☐ Improved access to resources (land, water, technology)
- ☐ Better training and education programs
- ☐ Increased financial support or credit access
- ☐ More supportive policies for women
- ☐ Other (please specify)

Section 6: Future Aspirations and Policy Recommendations

29. What are your future aspirations regarding your role in agriculture?

- Expand my agricultural work
- Transition to a different livelihood
- Maintain my current involvement
- Other (please specify)

30. Do you think women in agriculture need more support from the government or NGOs?

- Yes, significant support
- Yes, some support
- No, there is enough support
- No support needed

31. What kind of policies or initiatives would help improve the livelihoods of women in agriculture?

- Policies that ensure better access to resources
- Gender-sensitive agricultural policies
- Financial programs specifically for women
- Awareness and training programs
- Other (please specify)

32. In your opinion, how can women in agriculture be empowered further?

- Through education and training
- By ensuring land ownership rights
- By increasing financial independence
- By improving market access
- Other (please specify)

Participant Consent and Confidentiality Form:

PARTICIPANT CONSENT AND CONFIDENTIALITY
FORM

Title of the Study: *Women Livelihood in Agriculture: A Sociological Study in Kurukshetra District, Haryana*

Scholar's Name: Sushma Devi

Institution/Affiliation: Lovely Professional University (LPU)

Contact Information: +91 9671342521

Date: ____/____/2025

SECTION 1: STUDY OVERVIEW AND PURPOSE

You are invited to participate in this research study that aims to explore **the role, challenges, and livelihood conditions of women engaged in agriculture in Kurukshetra District, Haryana**. The primary objectives of this study include:

- ✓ Understanding the socio-economic status of women in agriculture.
- ✓ Identifying gendered labor divisions and their impact on women's roles.
- ✓ Analyzing financial, social, and institutional challenges faced by women farmers.
- ✓ Evaluating the contribution of women to the agricultural economy.

This study is being conducted **strictly for academic purposes** and aims to contribute valuable insights that may help in shaping future discussions and policies related to gender and agriculture.

Your participation is **completely voluntary**, and you may decide whether or not to take part after reading the information provided below.

SECTION 2: PARTICIPATION REQUIREMENTS AND EXPECTATIONS

If you agree to participate, you may be involved in one or more of the following data collection methods:

- ✓ **Structured Questionnaire** (*Estimated Duration: 30-45 minutes*)
- ✓ **Focus Group Discussions** (*Estimated Duration: 60-90 minutes, optional*)
- ✓ **In-Depth Interviews** (*Estimated Duration: 60 minutes, optional*)

Your participation in any of these data collection methods will help in gathering comprehensive data regarding the experiences and challenges of women in agriculture. You may choose to participate in any or all of the options provided.

- ☒ **I agree to participate in the structured questionnaire.**
- ☒ **I agree to participate in a focus group discussion.** (Optional)
- ☒ **I agree to participate in an in-depth interview.** (Optional)

SECTION 3: PARTICIPANT CONSENT FORM

Consent to Participate: -

Please check the boxes and sign below to indicate your consent:

- ☐ I have read and understood the information provided about this study.
- ☐ I voluntarily agree to participate in this study.
- ☐ I understand that my participation is completely voluntary and that I may withdraw at any time without any consequences.
- ☐ I understand that my participation is confidential, and my personal identity will not be revealed in any research findings.
- ☐ I understand that I may refuse to answer any question that makes me uncomfortable.
- ☐ I agree to provide accurate and honest responses to the best of my ability.
- ☐ I understand that the scholar conducting this study will securely store my responses, which will be used solely for academic research purposes.
- ☐ I agree to the use of anonymized responses in the final research report.
- ☐ I understand that my responses may be used for future academic research, provided that my identity remains anonymous.
- ☐ **Optional Consent for Focus Group Discussions and In-Depth Interviews**
 - ☐ I agree to participate in a focus group discussion or an in-depth interview, knowing that my identity will remain confidential.
- ☐ **Optional Consent for Use of Anonymized Quotes in Reports**
 - ☐ I agree that my responses may be quoted anonymously in the research findings.

☐ **Optional Consent for Future Research Reference**

☐ I agree that my anonymized responses may be used in future academic studies on women in agriculture.

Participant Name: _____

Participant Signature/Thumb Impression: _____

Date: ____/ ____/ 2025

SECTION 4: VOLUNTARY PARTICIPATION AND WITHDRAWAL RIGHTS

Your participation in this study is entirely **voluntary**, and you have the following rights:

- ✓ You may **refuse to participate** in any part of the study.
 - ✓ You may **skip any question** that you do not wish to answer.
 - ✓ You may **withdraw from the study at any point** without providing a reason, and there will be no negative consequences.
 - ✓ If you withdraw, any responses you have provided may be deleted at your request.
- ☒ **I understand that my participation is voluntary and that I can withdraw at any time without consequences.**

SECTION 5: CONFIDENTIALITY AND PRIVACY MEASURES

To protect your identity and privacy, the following confidentiality measures will be strictly followed:

- ✓ Your responses will be **kept anonymous** in the final research report.
- ✓ No personal details such as your name, contact information, or location will be included in the published study.
- ✓ All information you provide will be stored **securely**, and access will be limited only to the scholar.
- ✓ Any notes taken during discussions or interviews will be anonymized before analysis.
- ✓ All collected data will be permanently deleted **five years** after the completion of the study.
- ☒ **I understand that my identity will remain anonymous and that my responses will be confidential.**
- ☒ **I understand that my responses will be analyzed in aggregate form, and no personally identifiable information will be used.**
- ☒ **I understand that all my responses will be securely stored and deleted after five years.**

SECTION 6: RISKS, BENEFITS, AND DATA USAGE

Potential Risks:

There are no significant risks associated with participation in this study. However, you may feel uncomfortable discussing certain personal or livelihood-related challenges. You have the right to skip any question or discontinue your participation at any time.

☒ **I understand that I may skip any question that makes me uncomfortable.**

Potential Benefits:

By participating in this study, you will:

- ✓ Contribute to academic research that highlights the role of women in agriculture.
- ✓ Help in identifying key challenges that women face in agricultural work.
- ✓ Provide insights that may help in shaping policies for gender equality in agriculture.

☒ **I understand that my participation may contribute to a better understanding of women's roles in agriculture.**

Data Usage and Future Research:

The data collected will be used strictly for this research study. However, anonymized responses may be used for future academic studies on related topics.

☒ **I consent to the use of anonymized responses in future academic research.**

☒ **I consent to my anonymized responses being used in future reports or publications. (Optional)**

SECTION 7: SCHOLAR'S ACKNOWLEDGMENT

I confirm that I have provided the participant with all necessary details regarding this study, answered any questions they may have, and ensured that they understand their rights and the confidentiality measures in place. The participant has voluntarily given informed consent to participate in this research.

✓ **Scholar's Name:** _____

✓ **Signature:** _____

✓ **Date:** ____/____/ 2025

FOR RECORD-KEEPING PURPOSES (TO BE COMPLETED BY THE SCHOLAR)

✓ **Participant Code Assigned:** _____

✓ **Mode of Consent:** ☐ Written ☐ Verbal (with witness)

✓ **Type of Participation:** ☐ Questionnaire ☐ Interview ☐ Focus Group
Discussion

CONTACT INFORMATION FOR PARTICIPANT QUESTIONS OR CONCERNS

If you have any questions, concerns, or wish to withdraw your participation, you may contact:

 **Scholar Contact:** +91 9671342521

 **Email:** rupasisodia47@gmail.com

THANK YOU FOR YOUR PARTICIPATION!

Your time and insights are valuable and will contribute significantly to understanding and improving the livelihood of women in agriculture.