LIVELIHOOD SECURITY OF FARM WOMEN IN KERALA AND MANIPUR: A COMPARATIVE ANALYSIS

by

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THESIS

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DECLARATION

I, hereby declare that this thesis entitled **"Livelihood security of farm women in Kerala and Manipur: A comparative analysis"** is a bonafide record of research work done by me during the course of research and the thesis has not previously formed the basis for the award to me of any degree, diploma, associateship, fellowship or other similar title, of any other University of Society.

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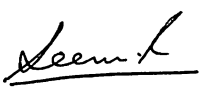

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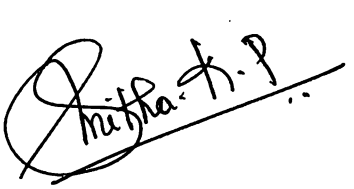

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"No one who achieves success does so without acknowledging the help of others".

Alfred North Whitehead

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LIST OF ABBREVIATIONS

Abbreviations	Full form
%	Percentage
et al	Co-workers
FAO	Food and Agriculture Organisation
KAU	Kerala Agricultural University
No.	Number
PCA	Principle Component Analysis
NGOs	Non-Governmental Organisation
HYV	High Yielding Variety
SHG	Self Help Group
SD	Standard Deviation
n	Number of respondents

Introduction

CHAPTER 1

INTRODUCTION

The greatest revolution in a country is the one that uplifts the status and living conditions of women. With this attitude in mind, Pandit Jawaharlal Nehru, India's first prime minister, mentioned, "When women go forward, the entire family moves forward, the village advances and the entire nation moves forward." Men and women have certain roles in the society based on the belief associated with the consciousness of masculinity and feminity. While men are considered as the breadwinners, women take care of domestic work. However, the gender roles are changing. The occupations which were earlier done only by men are now being shared or taken over by women.

Agriculture is the primary source of livelihood for about 58% of India’s population and contributes around 17% to the country’s GDP (IBEF, 2018). Agriculture is a growth and poverty-reduction engine in nations where it is the poor's major employment. Nonetheless, the agricultural sector in many developing countries is underperforming because women, who represent a key resource in agriculture and rural economies through their roles as farm women, labourers, and entrepreneurs, face more severe constraints than men in terms of access to productive resources almost everywhere. Women make about half of the world's population, yet they also make up roughly two-thirds of all job occupations. Women are valuable human resources who execute the most strenuous and back-breaking tasks in the agricultural and related industries, including on-farm and off-farm operations, as well as household chores. As agricultural labourers, farmers, co-farmers, farm entrepreneurs, and farm managers, women play a vital part in agriculture.

Women play a key role in Indian economy. Historically, in Indian economy, agriculture has been the mainstay and traditionally, the most vital sector of female employment, particularly in the rural areas. Over the years, there is a gradual understanding of the significant roles and contribution of women in agricultural

development, food security, nutrition, horticulture, processing, fisheries, sericulture and other allied fields.

Food security was misunderstood as a core requirement of rural households, according to research conducted in the late 1980s and early 1990s, which did not take livelihood security into account. Later on, the necessity of nutritional security is emphasised, with a focus on food, health, maternity, and child care. In addition to dietary intake, health and disease, maternity and childcare as major variables, food is an important part in the malnutrition equation. Food security is important but insufficient for nutritional security. As a result of the evolution of this concept, the concept of livelihood security was born.

The challenge of development, according to the World Bank's World Development Report (1991), is to increase the quality of life. A greater standard of living necessitates not only a bigger salary, but also much more. Better education, a higher level of health and nutrition, less poverty, a cleaner environment, more opportunities of higher quality, and more individual freedom are all part of it. This demonstrated that a variety of tactics are used to achieve livelihood security.

Farm women

A farm woman is a woman who owns, works on or operates in agricultural enterprise, either commercially or to sustain herself or her family. According to Trauger (2004), farm woman is an individual who assists with farm work, who is the primary contributor of labour and decision making to a farm on a daily basis. The image of a farm woman is that of submissive, dutiful, illiterate, timid, naive, powerless and assetless females who have been caged in a network of traditions and customs. They are obstructed from social inputs like education, healthcare facilities, access to food and clean drinking water, financial services and social progress. They are over burdened with agricultural operations which involve physical labour and drudgery. In India, farm women who work as labourers are mostly employed for transplanting, weeding and harvesting and also engaged in various crop production operations as family labourers.

In agricultural activities, Indian women's roles range from managers to landless labourers. They are an important component for sustained agricultural production.

Role of farm women

Woman was the first to domesticate plants and introduce farming as an art and science. They generate 60 to 80 percent of the food consumed in underdeveloped countries and half of the world's food supply (Sakamma, 2013). Any society of a nation can't develop without the active participation of women. In India, rural women are heavily active in agricultural operations and are the largest producers of food in terms of value, volume, and labour rate. They constitute the backbone of India's agricultural and rural economy. They perform multiple duties at home as well as in the fields which are labour intensive.

In addition to their domestic tasks, farm women play a vital role in food production, sowing, planting and post-harvest activities, rearing livestock, trading, marketing and are also engaged in range of crop, livestock, agro-based activities and enterprises. They also run the family in day-to-day life as well as earn through labour and other managerial activities. In villages, they are completely occupied and overburdened with triple responsibilities of home, farm and livestock management. As per FAO (2010), it is asserted that with the increasing male migration, women are becoming the sole producers of the food for the maintenance of the family, this shows that women play a major role in traditional activities such as subsistence food production, household chores, food processing, home crafts, market trade, etc.

Status of farm women

Women hardly own any land yet they grow half of the world's food. Women contribute to one-third of the world's labour force but participate in the occupation which are paid very lowly and more likely to be vulnerable to unemployment than men. In terms of illiteracy, men are outnumbered by women. In India, most of the farm women belong to illiterate, poor and assetless farm family from backward communities

who actively participate in farm operations. Their contribution to agriculture and allied activities are not recognised and appreciated and is invisible conceptually and culturally. In general, the status of farm women is much lower than that of men because of the normative male dominance in the society, inherent timidness of farm women, lack of opportunities and decision making and the freedom of access to modern technologies. In comparison to men, they have limited access to agricultural assets, inputs, and services. For the same agricultural activity, men are almost always paid more than women. Farming choices are frequently made by males, and women perform the work. Men are often the ones who market farm produce, giving them entire control over household finances.

Even though they highly participate in agricultural operations, they are considered as "invisible work force". So, comprehensive understanding of their participation becomes obligatory. Their involvement is extensive, but till now it remained uncounted and undervalued. Further, comparative analysis of farm women from different regions has not been made so far. As a result, the study was conducted with this in mind.

Need for the study

With inadequate access to education and technology, women tend to lack behind in socio-economic terms. Regardless of their eagerness they have not been able to take advantage of the opportunities from new technologies, innovations and markets. According to Pattnaik (2009), women's empowerment is critical for significant social progress, and the major causes of hunger and nutritional insecurity are poverty, illiteracy, population expansion, and unfair asset allocation. Women are intensely involved in agriculture yet their knowledge about the new technologies is limited because of different sociological and cultural factors which affect their potential and capability to generate higher livelihood for themselves and their families. Thus, it is important to think scientifically about women empowerment not only for equity reasons but also for the sake of efficiency to rise the agricultural production and rural livelihood (Srivastava *et al*., 2016).

Farm women’s contribution to agriculture has been inadequately understood and thus largely paid no attention. Farm women's contribution to the farm sector has been recognised by planners and policymakers, but there have been few scientific and experimental attempts to explore their real engagement in crop production and other activities. The areas where farm women face barriers should be called to the attention of the researchers. The needs and problems need to be critically studied and documented to form the base for further research strategies for generation of technological innovations. In the ultimate analysis, it is only the concern, commitment and intensive action of agricultural research systems and policy makers that can lead to meaningful results in imparting women’s perspective in research and extension priorities and strategies.

The concept of livelihood security contains three key characteristics:

i) Human capabilities, such as education, skills, health, and psychological orientation.

ii) Possession of other tangible and intangible assets, such as social, natural, and economic capital.

iii) The fact that economic activities exist.

The combination of these factors determines the household's livelihood strategy. In simple terms, livelihood security refers to a family's capacity to meet basic requirements such as food, clothing, shelter, and a minimum amount of income, as well as basic education and social involvement.

In this respect, the current study focuses on the following researchable issues:

i) What factors contribute to farm women's livelihood security?

ii) What are the resources and infrastructural facilities available and accessed relating to livelihood security?

iii) What are the barriers that rural women face in obtaining livelihood security?

iv) What suggestions and recommendations could be made to formulate livelihood security framework?

v) What are the farm women's personal, socio-psychological, and cultural characteristics?

Objectives

1. Assess and compare the sustainable livelihood security of farm women in Kerala and Manipur.
2. Analyse the relationship between personal, socio-psychological and cultural characteristics of the respondents with livelihood security.
3. Delineate the constraints experienced by the farm women and formulate a sustainable livelihood security framework.

Scope of the study

The purpose of this research is to learn more about the livelihood security of farm women in Kerala and Manipur. Food security, occupational security, educational security, habitat security, health security, and social security are all aspects of livelihood security. Women in Kerala have historically enjoyed remarkably better level of literacy, healthcare, maternal health, etc. However, their position in society or public participation has not improved proportionately. Kerala has been witnessing a dichotomy of fallowing of farm land on one hand and increasing dependence for food products on the other. The crisis that the farming sector has been facing in Kerala, constantly affect the entire population particularly, women.

Any society of a nation can’t develop without the active participation of women. Empowering and investing in rural women has, over the years, resulted in significant improvements in productivity and rural livelihoods. A comparison of the livelihood security of two states will aid in the planning and formulation of strategies to improve the livelihood security of the underperforming state's farm women. Agriculture, as the people of Manipur's primary occupation, plays a large role in the state's economy. In

Manipur, women play a vital part in crop production, cattle, horticulture, post-harvest operations, agro-forestry, fisheries, and other agricultural and associated industries. Due to its diversities and topography, altitude, fertility and climatic condition, it offers a greater scope for cultivation of various major as well as minor crops. Agricultural activities which are generally carried out by men are now being undertaken by women as men charges higher wages than women. Women have put in a lot of effort, not just physically but also in terms of quality and efficiency.

Hence it will be highly useful to analyse the differences with regard to livelihood securities of farm women of Kerala and Manipur. The gathered information of the more secured state can be utilised for uplifting the underperforming state. The sustainable livelihood security framework which will be developed through this study can be utilised by the policy makers and different stakeholders for the preparation of efficient, practical and feasible action plan for the development of farm women. This study will definitely throw a light for strengthening the livelihood security of farm women as well as the farming community as a whole.

Review of literature

CHAPTER 2

REVIEW OF LITERATURE

This chapter attempts to provide new insights and a theoretical framework for farm women's livelihood security. The previous studies pertaining to the study's aims are examined and provided in this chapter. This has been constructed using definitions, ideas, and concepts. An attempt has been made to provide adequate study orientation. This aids in evaluating one's own research efforts by comparing them to similar efforts made by others.

The following headings are used to organise the review.

2.1 Livelihood security definition

2.2 Concept of livelihood security

2.3 Livelihood status of farm women

2.4 Personal and socio-psychological characteristics

2.5 Relationship between independent variables and livelihood security

2.6 Constraints faced by farm women related to livelihood security

2.7 Suggestions given by farm women to improve livelihood security

2.8 Conceptual model of the study

2.1 Definition of livelihood security

"Livelihood" refers to adequate stocks and flows of food and cash to meet basic needs; whereas "security" refers to secure ownership of, or access to, resources and income-generating activities, including reserves and assets to offset risks, ease shocks, and meet contingencies (Chambers, 1988).

"Ownership of or access to resources and assets to offset risks, relieve shocks, and fulfil contingencies," according to Redelift (1990).

"The capabilities, assets (stores, resources, claims, and access) and activities required for a means of living," according to Chambers and Conway (1992). "A livelihood is said to be sustainable when people can cope with and recover from stress and shocks, maintain or enhance their capabilities and assets, and provide sustainable livelihood opportunities for the next generations."

Livelihood security is defined as adequate and sustainable access to income and resources to meet basic needs which includes adequate access to food, potable water, health facilities, educational opportunities, housing, time for community participation and social integration (Drinkwater and Mc Ewan, 1992).

Long (1997) defines livelihood as "individuals and communities struggling to make a living while dealing with a variety of consumer and economic needs while managing with uncertainty."

According to Ellis (2000) livelihood comprises the assets (natural, physical, financial and social capital), the activities and access to these that together determine the living gained by the individual.

Huq (2000) claimed that a livelihood encompass income, both cash and kind as well as social institutions relating to kinship, family, neighbourhood and village, women groups and property rights required to support and to sustain a given standard of living.

Livelihood security of a household is defined as its ability to meet basic needs like food, health, shelter and minimal levels of income, basic education and community participation (Beevi and Rohit, 2018).

2.2 Concept of livelihood security

Ali (2005) based on his study on livelihood and food security in rural Bangladesh reported that capital of women played an important role in attaining food

security. He also reported that women mainly young and widowed or divorced without son took responsibility in attaining livelihood security by engaging in more economic activities.

According to Baby (2005), seven different characteristics of livelihood security were selected and weighted based on their perceived importance in determining the livelihood security of rural households in her study on livelihood security in rural communities. In order of importance, the most significant dimension was household food security, followed by occupational security, habitat security, health security, environmental security, social security, and educational security.

The students considered the trainings were very valuable for technical knowledge gain, technical skill development, and performing day to day operations, according to Kaur and Talukdar (2007), who conducted a study on the value of farm women training programmes in Livelihood Security. Furthermore, the study clearly identified specifically developed farm women empowerment training programmes that contribute to livelihood security.

Shyamalie (2008) observed that the situation of females in Nuwara Eliya was better in terms of marker of status and livelihood security than females in Kangra district, based on her study comparing the livelihood security of women in Kangra district of India with Nuwara Eliya district of Sri Lanka.

In a study of rural women's livelihood options in Kerala, Devi and Vijayaraghavan (2010) discovered that 36.25 percent of them still rely on agriculture as a source of income. 30.25 percent of them have a source of income in the service sector, 18.25 percent rely on money from foreign nations through family members who have migrated there, 13.25 percent have a source of income in the industrial sector, and only two percent have a source of income in the business sector.

In their study on farmers' livelihood diversification in West Bengal, Saha and Bahal (2010) found that the majority of diversifiers (60.00 percent) had a medium level of livelihood diversification index, while only 21.74 percent and 18.26 percent of diversifiers had a high and low level of livelihood diversification index, respectively.

Shincy (2012) identified financial capital (33.9%) as the component contributing the most to the livelihood capital index, followed by social capital (33.6%), physical capital (20.2%), human capital (11.4%), and natural capital (11.4%), while conducting livelihood analysis of the Irula tribe of Attappady (0.8 percent).

In a study conducted by Sreeja (2013) on the Kattunaikan tribe of Wayanad, a positive significant link between landholding and livelihood capital was discovered.

With 210 respondents, Mamathalakshmi (2013) investigated the livelihood security of agricultural labourers in Karnataka. The study shows how agricultural labourers' livelihood security varies depending on their situation. More than half of the respondents in a rainfed environment (57.14 percent) reported a poor level of livelihood security, followed by 21.43 percent who had medium and high levels of livelihood security. More than two-thirds of agricultural labourers (64.29 percent) in irrigated areas had a medium degree of livelihood security, followed by 21.43 percent and 14.28 percent, respectively, who had high and low levels of livelihood security. In a plantation environment, more than half of agricultural labourers (54.28 percent) had a high level of livelihood security, followed by medium (32.86 percent) and low (12.86 percent) levels of livelihood security.

According to Dhakar (2014), the livelihood aspects can be arranged in descending order as human capital (45.75), physical capital (42.25), food security (41.33), social security (40.35), and financial security (40.35) after the NRLM programme sustainable livelihood index through income generating activities (39.35).

Malangmei *et al.* (2015) pointed out that the livelihood security deals with sustainable socio-economic, cultural and political systems along with their constraints, vulnerabilities, marginalization and risks.

Kaur (2019) determined that 86.3 percent of households in Ludhiana district and 70.4 percent of households in Fatehgarh Sahib district had medium to low household livelihood security based on his study of livelihood security of small and marginal farm households in two Punjab districts.

Lifestyles, according to Sathwika et al. (2019), are the outcome of how and why individuals organise to modify the environment to suit their basic requirements through technology, labour, power, knowledge, and social ties. Women make up half of the human population and have been highlighted as major agents of sustainable development through a comprehensive approach to generating new patterns and processes of development.

2.3 Livelihood status of farm women

Azmi (2002) investigated the obstacles to women's livelihood options in rural Sri Lankan peasant colonisation initiatives. The study discovered that land access for women was a serious issue that hampered women's ability to pursue various livelihood options, and that it needed to be addressed with consequences for women's future livelihood stability.

Ali (2005) conducted a livelihood and food security study in Bangladesh's Manikgani district's Saturia sub-district. The gender of household members was shown to be important in achieving individual food security, while women's social capital was important in achieving household food security and avoiding vulnerability, according to the study. It was also stated that women, particularly young women and widowed or divorced women without sons, bear greater responsibility for supporting their lives by engaging in economic activities.

Baby (2005) conducted a study on the livelihood security of Kerala's rural community and established the 'Livelihood Security Index (LSI)' to assess the level of livelihood security. She analysed seven livelihood security characteristics while developing the Livelihood Security Index. As a consequence, the mean LSI of labourers, marginal farmers, and small labourers was 52.03, 64.16, and 81.46, respectively. The rural community's health security was found to be the highest, while its social score was the lowest.

According to Parmanand (2012), the overall livelihood security of the farmers in the research region was determined to be 47.20 percent, whereas 22 percent of the

respondents had a high level of livelihood security through their individual ways of livelihood generating. Farmers who rely on livestock for their livelihood generation have stronger food, economic, health, institutional, and infrastructural security than farmers who do not rely on livestock for their livelihood generation. Educational and food security contributed the most to improving farmers' overall livelihood security; institutional security, followed by social security, contributed the least to improving farmers' overall livelihood security in the research area.

According to Binkadakatti (2013), rehabilitant farmers' livelihood security was determined to be 54.66 percent, with the majority (36.67 percent) belonging to the medium livelihood security category, followed by low (33.89 percent) and high (33.89 percent) livelihood security categories (29.44 percent). Natural capital was found to be low among the components of livelihood security (48.77 percent). The performance of human capital (63.59 percent) and social capital (55.24 percent) was moderate. Among all the components of livelihood security, physical capital (72.05 percent) and financial capital (68.28 percent) performed better.

Dhakar (2014) discovered the index of sustainable livelihoods through income-generating activities in his research. Food security (28.11), human capital (27.50), social capital (26.21), physical capital (24.68), and financial capital (24.68) were the sustainable livelihoods indexes before the NRLM programme (21.40). Human capital (45.75), physical capital (42.25), food security (41.33), social capital (40.35), and financial capital (40.35) are the livelihood characteristics that can be ordered in descending order following the programme sustainable livelihoods index through income-generating activities (39.35).

Hridya (2018) based on her study revealed that the respondents of Thiruvananthapuram, Palakkad and Malappuram districts had high level of habitat and social security while they had low level of educational security. Further, it was reported that they had medium level of livelihood, food, environmental and occupational security.

Based on his research, Dhakade (2020) found that food security and health security contributed the most to improving total livelihood security of the selected respondents

in the research area, while educational security and economic security contributed the least. He went on to say that around a quarter of the respondents had a high level of livelihood security as a result of their various forms of livelihood.

2.4 Personal and socio-psychological characteristics

2.4.1 Age

In his study on education and women's empowerment, Singh (2001) found that the majority of the respondents were middle-aged women with poor literacy, low family income, and a nuclear household with little social participation and usage of mass media.

Padmavathi (2002) discovered that the majority of the respondents in her study on farm women's participation in farming were in the senior age group (80%), followed by the middle age group (55.00%), and the young age group (37%).

The age of the respondents in Dhillon et al. (2007)'s study on farm women's involvement in agriculture ranged from 24 to 56 years. The majority of the responders were between the ages of 35 and 45.

According to Nisanka (2012), middle age accounted for 66.40 percent of the respondents, with elderly age (18.20 percent) and young age (18.20 percent) following closely behind (15.40 percent).

Devi (2016) found that the bulk of respondents (64 percent) are in the age category of 39-53 years, followed by 24-38 years (27 percent) and 54-68 years (9 percent) in her study "Exploring the involvement of women in dairy farming as an alternative livelihood in Manipur."

According to Malik (2016), who conducted a study on the livelihood condition of agricultural women in the Bhadrak district of Odisha, the majority of respondents (62 percent) are in their middle years.

According to Swathi (2016), more than half the tribal farmers (62.50 percent) were in their middle age, followed by the young (25.00 percent) and the elderly (25.00 percent) (12.50 percent).

According to Hanglem (2017), the majority of the respondents (65.00 percent) were in the old age group (over 50 years), while 35.00 percent were in the middle age group, and only 1.50 percent were young farmers (below 35 years).

Harshitha (2018) conducted research on the effectiveness of family farming and the livelihood security of women-headed families. She explained that nearly half of the respondents (47.50%) are in the medium age group, followed by the young age group (37.50%) and the old age group (37.50%).

2.4.2 Education

According to Trivedi (1963), in her study on the impact of agricultural market yard committee level training programme in Nellore district of Andhra Pradesh revealed that majority of the respondents had education up to high school level.

According to Shyamalie (2008), the literacy rate in Kangra district was significantly higher for men (98%) than for women (84%), indicating a significant discrepancy in education between men and women. In Nuwara Eliya, however, no such gap was discovered. This was due to Sri Lanka's policy of providing free education to all students up to the graduation level.

According to Parmanand (2012), 40.83 percent of the respondents had a medium level of education, while 26.25 percent had a secondary level of education, 21.25 percent had a primary level of education, 9.17 percent had a graduate or higher level of education, and 0.83 percent were illiterate.

According to Datta (2013), 32.14 percent of farmers are illiterate, with 28.57 percent having completed primary school, 22.86 percent having completed middle school, and 16.43 percent functional or literate.

According to Mohanty et al. (2013), more than half of vegetable-growing farmers (51.68 percent) had only completed middle school, followed by higher secondary (21.67 percent), graduate and above (15.00 percent), primary class (11.67 percent), and illiteracy (6.68 percent).

Ayyappan (2014) inferred that 32.50 per cent of the tribal women had primary education followed by the rest which belonged to illiterates (30.80 %) and functional illiterate (14.20 %), middle (15.00 %), secondary (4.20 %) and collegiate (3.30 %) level of education categories.

Devi (2016) discovered that the bulk of respondents (49%) are in middle school (score-4), followed by high school (26%) (score-5), graduate school (19%) (score-6), primary education (8%) (score-3), can read and write (5%) (score-2) and can read only 1% (score-1).

According to Hanglem (2017), 56.00% of the respondents had attended high school, followed by 31% higher education, and 13.00% middle school. The bulk of the responders were educated, it can be stated.

According to Harshitha (2018), more than three-quarters of the respondents (83.75%) studied primary through middle school, followed by high school (11.25%), illiteracy (5.00%), and none of the respondents studied PUC and graduation.

According to Asha (2020), roughly a third of the respondents (35%) had completed high school, 25% had completed middle school, 19.17 percent had completed college, 16.67 percent had completed primary school, and the remaining respondents had completed a professional degree (4.17 percent).

2.4.3 Annual income

According to Gurjar (2002), 54.02 percent of members had a medium annual income and 26.43 percent had a low annual income.

In the Dharwad district, Savitha (2004) found that 45.50 percent of respondents had a low income, followed by 28.28 percent with a medium income and 25.70 percent with a high income.

According to Parmanand (2012), the respondents with the lowest yearly income (47.08 percent) were followed by those with a medium annual income (36.25 percent) and those with a high annual income (36.25 percent) (16.67 percent).

According to Shyamalie (2008), the distribution of sampled households by per capita income reveals that the majority of households were in the medium and low income groups (77 percent in Kangra and 92 percent in Nuwara Eliya).

In a survey conducted by Dhakar (2014) on the assessment of rural women's sustainable livelihood through income-generating activities, 44.17 percent of the respondents reported having a medium annual income.

According to Dhakade (2020), annual family income was shown to be positively and significantly connected with respondents' livelihood security.

According to Harshitha (2018), 43.75 percent of respondents reported a low yearly income, followed by high (32.5 percent) and middle (23.75) annual incomes.

2.4.4 Family size

According to Dhanasree et al. (2014), nearly half of tribal women respondents (49.44 percent) had a medium family size, followed by those with a big (31.12 percent) and tiny (19.44 percent) family size.

According to Lal (2014), approximately 70% of respondents (68.13 percent) have 5-7 individuals in their households, whereas 18.13 percent have more than 7 members and 13.75 percent have less than 5 members.

Rai (2015) discovered that more over 60% of respondents (67.00%) had a medium-sized family, with the remaining 21.50 and 11.50 percent having small and large families, respectively.

In his study on the livelihood condition of farm women in the Bhadrak district of Odisha state, Malik (2019) found that nearly two-thirds of the respondents (64%) had a high family size, i.e. more than seven persons.

Kaur (2019) revealed that majority (60.22%) of the household in sample area were small in size followed by 35.22 per cent had medium family size. A very less proportion of household i.e. 4.54 per cent fall in the category of large family size.

In her study on family farming efficiency and livelihood security of women-headed households in Tumakuru district, Harshitha (2018) found that the vast majority of respondents (83.13 percent) had medium-sized families, followed by large (13.74 percent) and small-sized families (3.13 percent).

2.4.5 Land holding

According to Nisanka (2012), the majority of respondents (72.73 percent) had small land holdings, followed by medium land holdings (16.56 percent), and large land holdings (16.56 percent) (10.91 percent).

According to Barman et al. (2013), the majority of tribals (70.83%) had marginal land holdings, followed by those with small (15.00%) and medium (14.17%) land holdings.

According to Mohanty et al. (2013), small farmers account for the biggest percentage of farmers (40%) followed by medium farmers (30.83%) and marginal farmers (30.83%). (22.66 percent).

According to Senthil (2013), more than two-thirds of tribal farmers (68.34%) had marginal-sized farms, followed by 25.83 percent with small-sized farms and 5.83 percent with large-sized farms.

According to Rai (2015), more than half of the respondents (52.50 percent) had a small land holding, followed by marginal (29.50 percent), medium (13.50 percent), and large (13.50 percent) land holdings (5.50 percent).

Devi (2016) discovered that the majority of respondents (46%) belong to the 0.02-1.13 acre land holding group

followed by the 1.14-2.25 acre land holding group (40%) and the 2.26-3.37 acre land holding group (14%) correspondingly. It is telling that in Manipur, the women of small-land-holding families are primarily engaged in dairy farming.

According to Harshitha (2018), small farmers account for more than half of the respondents (53.75%), followed by marginal (30.63%), and large farmers (30.63%). (15.62 percent).

According to Jodha (2018), medium land holdings were held by 46.67 percent of families in Rewari district, followed by small (39.33 percent) and big (14.00 percent) land holdings. In the Mahendergarh district, more than half of the respondents (58.00%) had a big land holding, followed by medium (28.67%) and minor (13.33%) land holdings, respectively.

Agriculture was the principal source of livelihood for farmers, according to Dhakade (2020) in his study. The respondents had tiny to marginal land holdings and relied on labourer employment, animal husbandry, agribusiness, and any other type of activity to supplement their income.

2.4.6 Farming experience

Singh (2011) found that higher percentage of farm women (48.73%) were having medium farming experience.

According to Mishra (2013), the majority of farm women (46.60 percent) have medium agricultural experience.

According to Roy et al. (2013), the majority of the respondents had a moderate level of farming experience (75.00 percent). The respondents' average farming experience was assessed to be 19 years.

According to Lal (2014), more over half of the respondents (55.00%) had medium agricultural experience, followed by high (23.75%) and low (21.25 percent).

Swathi (2016) indicated that in paddy cultivation more than fifty per cent of the tribal farmers (55.83 %) had medium farming experience followed by low farming experience (27.08 %) and high farming experience (17.08 %).

2.4.7 Mass media exposure

According to Devarajaiah (2010), 40.00 percent of small farmers had low mass media exposure, followed by medium (31.0%), very low (25.00%), and only 4% had high mass media exposure. With regard to marginal farmers, 38.00% had low mass media exposure, followed by 25.00% each for very low and medium, and 12.00% had high mass media exposure.

Datta (2013) discovered that over half of tribal farmers (49.29%) had a medium degree of media participation, while 36.42 percent had a low level of media participation.

In his study on the assessment of rural women's sustainable livelihood through income-generating activities in Satna district, Dhakar (2014) found that 48.33 percent of respondents used a medium level of information source, 27.50 percent used a high level of information source, and only 23.33 percent used a low level of information source.

According to Yashodhara (2015), the majority of farmers (41.10 percent) have a low degree of mass media participation, followed by the high (36.10 percent) and medium (22.80 percent) levels.

Devi (2016) discovered that the majority of respondents (60%) belong to the mass media communication group 9-12, followed by the mass media communication group 5-8 (38%) and the mass media communication group 13-16 (2%).

According to Harshitha (2018), around 45.5 percent of the respondents used mass media infrequently. More over a third of the respondents (39.38%) fell into the high category of mass media usage, while 15.62 percent fell into the medium category.

2.4.8 Extension orientation

According to Lavanya (2010), more than half of the farmers (58.3%) had a medium level of extension engagement, with 26.27 percent having a high level of extension participation and 15.0 percent having a low level of extension participation.

Chouhan (2013) found that the majority of farm women (80.33 percent) had medium extension engagement in his study on the role of farm women decision making on vegetable cultivation in the Tikamgarh area of Madhya Pradesh.

According to Mohanty et al. (2013), low extension engagement was reported by 46.67 percent of tribal farmers, followed by medium (40.00 percent) and high (13.33 percent) extension participation.

Devi (2016) found that the majority of respondents fall into the 0-4 (57%) low extension worker communication group, followed by 5-9 (39%) medium extension worker communication group, and 10- 14 (4%) high extension worker communication group.

According to Harshitha (2018), more than a third of the respondents had a low (36.87 percent) or medium (36.25 percent) degree of extension orientation, while a fourth (26.88 percent) had a high level of extension orientation.

2.4.9 Scientific orientation

According to Supe (1963) in his study on factors related to different degrees of rationality in decision making among farmers in Buldna district revealed that most of the respondents had medium scientific orientation, followed by high and low scientific orientation, respectively.

In a study on the sustainability of farming systems and livelihood security among rural households in Tripura, Saha (2008) found that almost all respondents (97.505) fall into the medium scientific orientation category, with only a small percentage belonging to the high (1.66%) and low (0.83%) scientific orientation categories.

In a study titled "An investigation of livelihood security among agricultural labourers in Karnataka," Mamathalakshmi (2013) found that 39.05 percent of respondents had a low scientific orientation, followed by 36.67 percent and 24.29 percent for high and medium scientific orientation, respectively.

According to Hanglem (2017), the majority of respondents (71.00%) had a medium degree of scientific orientation, followed by low (21.00%) and high (8.00%) levels of scientific orientation. Farmers with a scientific perspective, according to her research, are more responsive to new technologies, use scientific methods in organic farming, uncover and analyse their challenges, and identify the perceived needs in operating any technology or approach related to organic farming.

According to Harshitha (2018), more over half of the respondents (61.88 percent) had a medium level of scientific orientation, followed by low (25.62 percent) and high (12.50 percent) scientific orientation.

2.4.10 Risk orientation

Bhagyalaxmi et al. (2003) found that the majority of respondents (75.36 percent) had a medium risk orientation, followed by low (15.56 percent) and high (13.33 percent) risk orientations in their study on the profile of rural women micro entrepreneurs. The majority of responders had a medium risk bearing ability, as evidenced by the research above.

According to Goel and Yadav (2012), 53% of rural women have a high risk orientation, followed by 36% who have a medium risk orientation and 11% who have a low risk attitude.

According to Mamathalakshmi (2013), high risk orientation was found in 48.57 percent of agricultural labourers, followed by medium (35.72 percent) and low (15.71 percent) risk orientation.

Dhakar (2014) noted that the majority of the respondents (51.67 percent) had medium risk carrying ability in his study on the assessment of rural women's sustainable living through income-generating activities in Satna district.

Yashodhara (2015) observed that both in rainfed and irrigated situation 34.5, 33.8 and 31.7 per cent of farmers were having low, high and medium level of risk orientation, respectively.

According to Harshitha (2018), more than a third of the respondents (43.12 percent) had a high risk orientation, followed by medium (29.38 percent) and low (27.50 percent) risk orientations.

2.5 The relationship between independent variables and livelihood security

According to Geetha (2007), women's annual income has a substantial association with human capital improvement. It was also discovered that women's land ownership had a substantial association with the formation of natural capital. Age, education, engagement in the mass media, and training had no significant association with the development of any of the assets investigated.

At the 1% level of sustainable rural livelihoods, age, family size, land ownership, and economic motive were shown to be significant, according to Rathod (2007).

Saha (2008) discovered a link between marginal farmers' livelihood security and their socio-economic level and achievement motivation. In the case of small farmers, socio-economic level, family size, farming experience, and the link to the extension system were discovered to have a substantial impact on livelihood security. In addition, accomplishment orientation (among marginal farmers) and extension system link (among small farmers) were revealed to play a major role in explaining variation in livelihood security.

Deferred gratification, cosmopoliteness, credit orientation, family size, land ownership, social participation, and annual income of farmers were found to have a positive and significant association with livelihood security at the one percent level of significance by Narayani et al. (2010). At a 5% level of significance, risk orientation had a positive and substantial connection with livelihood security.

Education, land ownership, farming experience, occupation status, annual income, longevity of group membership, urban contact, use of source of information, extension contact, training obtained, market orientation, decision making, risk orientation, achievement motivation, economic motivation, and innovativeness were all found to have a significant relationship with sustainable livelihoods through income generating activities, according to Dhakar (2014). The findings also show that the respondents' age, caste, social participation, and family size had no significant relationship with their ability to sustain their lives through income-generating activities.

Harshitha (2018) found that annual income, land ownership, accomplishment motivation, livestock ownership, risk orientation, and agricultural dedication all had a one percent positive and significant link with livelihood security. Similarly, at the 5% level, family size, material possession, media consumption, deferred gratification, and extension orientation all had a positive and substantial link with livelihood security.

In his study, Dhakade (2020) found a positive association between the size of a land holding and the cropping system at a 5% level of significance, as well as a positive correlation between yearly family income and the farmers' livelihood security at a 1% level of significance. According to the regression analysis, the most important characteristics contributing significantly to farmers' livelihood security were their farming experience, annual family income, and cropping system. He also found that age and family size had a negative relationship with livelihood security.

2.6 Constraints faced by the farm women to achieve livelihood security

In their study on the livelihood options of rural women in Kerala, Devi and Vijayaraghavan (2010) found that the top ranked constraints in agriculture are labour (0.91), land (0.64), capital/credit (0.64), crop protection methods (0.76), stable price (0.55), marketing risk (0.69), and production risk (0.63).

Kiran (2011) reported that delay in weeding (79.44%), drudgery in operating hand tools in shifting cultivation fields (72.22%) and reduced opportunities for

for continuing shifting cultivation (71.11%) were the major problems of tribals in securing their livelihood status.

Insufficient irrigation facilities, poor farmer access to finance options, and the influence of natural calamities on agriculture, according to Parmanand (2012), were all impacting farmers' livelihoods.

According to Dhakar (2014), the biggest hurdles to respondents' sustainable living were a lack of technical knowledge (50.83), a lack of market orientation (46.66), unsuitability of occupations in local conditions (39.16), a lack of updated technology (26.66), and poor quality of inputs (24.16).

According to Patel et al. (2015), the constraints faced by tribal farm women for better participation in agricultural development activities are illiteracy (I), lack of irrigation facilities (II), lack of educational facilities (III), uneven land (IV), knowledge about improved agricultural technology are inadequate (V), inadequate transportation facility (VI), unavailability of timely inputs (VII), lack of appropriate technology (VIII), unfavourable climatic conditions (IX), low selling price of farm produce (X), lack of regular and timely contact with experts (XI), lack of marketing facility (XII), lack of training (XIII), social handicaps (XIV) and unemployment during off seasons (XV).

Harshitha (2018) reported that lack of electricity (Rank I), irrigation facilities (Rank II), lack of transportation facility (Rank III), extension agencies are difficult to reach for technical assistance. (Rank IV), high cost of production and lower returns (Rank V), lack of credit to invest on other income generating activities (Rank VI), non-availability of timely inputs like seeds and fertilizers (Rank VII) and lack of relevant training programmes (Rank VIII) were the major constraints faced by the farm women.

Chauhan (2018) reported that indecisive, time consumed in household chores, insufficient family support, inadequate competent guidance, inadequate credit and capital, inadequate marketing facilities, inadequate awareness, costly farm materials, inadequate knowledge about improved technology and education were the major constraints perceived by farm women in participating in agricultural activities.

According to Dhakade (2020), the respondents' main obstacles to achieving livelihood security were a lack of awareness of appropriate technologies and technical knowledge for improving crop productivity, low market prices for the products, a lack of information on product marketing, and repeated crop failures.

2.7 Suggestions given by farm women to improve livelihood security

Parmanand (2012) recommended increasing the frequency of arranging more need-based trainings and demonstrations in a participatory fashion with the support of farmers, as well as increasing the frequency of extension workers' timely intervention. There is an urgent need to increase the role and contribution of institutions in the study area, for the purpose of improving the basic infrastructure and access of farmers to these institutions, money-lending institutions should make some provisions for the farmers in providing some external motivation to carry out more than one livelihood activity for improving their overall livelihood security level, there is an urgent need to increase the role and contribution of institutions in the study area, for the purpose of improving the basic infrastructure and access of farmers to these institutions, money-lending institutions should make some provisions for the farmers

According to Dhakar (2014), the important suggestions given were to provide more information about sustainable livelihood (58.33), organise training and other extension programmes at village/block level (55.83), simplify loan procedure (52.50), improve transportation facility (45.83), more government’s encouragement in rural areas to undertake livelihood development projects (42.50) and availability of technological inputs on subsided rate (39.16).

According to Dhanasree *et al.* (2014), tribal women respondents suggested better transportion facilities, marketing facilities, regular extension worker visits, create awareness on income generating activities, conduct training programmes, establish training centres, provide access to credit and other financial services , access to better health facilities, reduce dependency on external financial source and access to appropriate technologies and information to enhance livelihood security.

Harshitha (2018) revealed that most of the women headed households comes under medium category of family farming efficiency. Hence, she suggested that there is need to develop a data base for women headed households and concerned development departments should plan and implement programmes covering diversified farm activities practiced by women headed households as a target group to enhance family farming efficiency. In addition, concerned organisations should develop essential infrastructural activities to supplement social, educational, health and habitat securities for women headed households to increase their livelihood security. Also, the concern organisations should plan to provide adequate supply of electricity, irrigation facilities and strengthening of extension system at field level to enhance technical competency among women headed households.

Hridya (2018) in her research study identified some shortcomings and proposed suggestions to resolve the inadequacies to improve livelihood security. The major suggestions proposed are to conduct capacity building programmes for the women, impart specific skill improvement programmes, exposure visits to different successful agro-enterprises, insurance programmes for the members of SHGs, ensure premium price for the products sold by the SHGs and motivate the members to take up innovative enterprises. The government, society and particularly men need to be conscientized to the entrepreneurial activities of women groups.

In his study, Dhakade (2020) noted the suggestions made by the respondents for improving their living conditions. Because extension functionaries' communication with respondents was found to be relatively poor, it was indicated that an effective extension effort is essential for technology transfer. Because the educational security percentage was so low (29%) there is a pressing need to improve educational facilities in order to improve livelihood security. Furthermore, the percentage of those who are financially secure was determined to be relatively low (35 percent). As a result, profitable intervention or alternative work during the off-season is required to improve their economic security. Finally, a training programme must be created to teach basic knowledge of technology adoption.

Methodology

CHAPTER 3

METHODOLOGY

The strategies and procedures used to achieve the study's objectives are discussed in this chapter. The following subheadings are used to organise the information.

3.1 Research design

3.2 Locale of study

3.3 Selection of respondents

3.4 Selection of variables

3.5 Operationalization and measurement of dependent variable

3.6 Operationalization and measurement of independent variable

3.7 Availability and access of resources and infrastructural facilities

3.8 Constraints faced by the farm women

3.9 Data collection methods

3.10 Statistical tools used

3.1 Research design

The study "Livelihood security of farm women in Kerala and Manipur: A Comparative Analysis" utilised an ex-post facto research design. Because the study's goal is to measure a phenomenon that has already occurred and is continuing, this design was chosen. Because variables are intrinsically constant, the researcher has no control over the independent variable and cannot manipulate it (Kerlinger, 1983).

3.2 Locale of the study

A multi-stage random sampling procedure was used to perform the study in Thiruvananthapuram district of Kerala and Ukhrul district of Manipur.

3.3 Selection of respondents

In this study the farm woman was operationally defined as 'the woman who is actively engaged in farming and related activities including agricultural labourer to sustain herself and/or her family'. A multi-stage random sampling method was adopted for the selection of respondents. For that, one district from each state - Thiruvananthapuram from Kerala and Ukhrul from Manipur - were purposively selected. From each district, block having maximum number of farm women were selected and from each block three panchayats with maximum number of farm women were selected. From each panchayat 15 farm women were selected randomly, thereby comprising a total of 90 respondents for the study.

District	Block	Panchayat	Number of respondents
Thiruvananthapuram	Vamanapuram	Vamanapuram	15
		Kallara	15
		Pangode	15
Ukhrul	Ukhrul North	Nungbi Khullen	15
		Phungcham	15
		Chingjaroi Khullen	15

3.4 Selection of variables

The objective of the study was to assess and compare the livelihood security of farm women in Kerala and Manipur. The dependent variable of the study was thus chosen to be livelihood security.

A list of 28 independent variables which were associated with personal, socio-psychological and cultural characteristics of the respondents were selected based on the review of literature and informal discussion with subject experts. The list of independent variables along with their operational definition were sent to 30 judges for

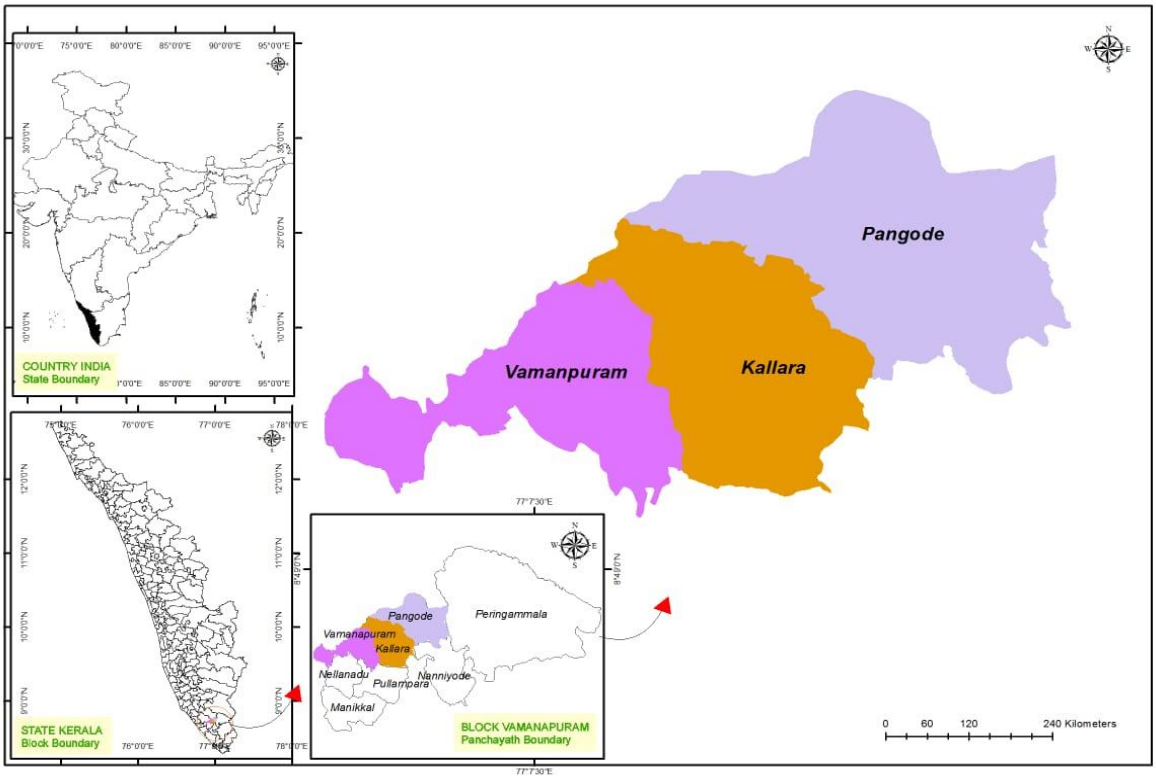

Plate 1. Kerala map showing locale of the study

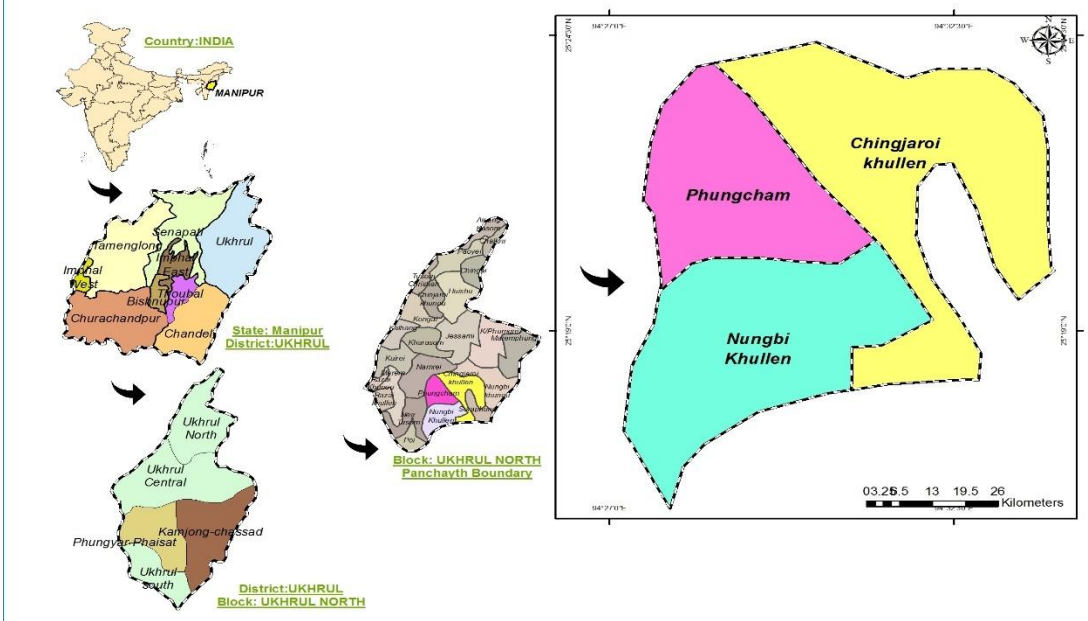

Plate 2. Manipur map showing locale of the study

for rating. The rating was done on a five-point continuum ranging from ‘most relevant’, ‘more relevant’, ‘relevant’, ‘less relevant’ and ‘least relevant’ with scores 5, 4, 3, 2 and 1 respectively.

The variables were selected based on mean relevancy score. The score obtained for each variable from 30 judges were added and divided by total number of judges. Average of the total score obtained for all the variables were calculated. For the study, variables that scored higher than the mean relevancy score were chosen. Thus, the independent variables selected through judges rating were age, education, annual income, family size, land holding, farming experience, mass media exposure, extension orientation, scientific orientation and risk orientation. With the use of a slightly modified pre-constructed scale, all of these variables were operationalized and measured.

3.5 Operationalization and measurement of dependent variable

Livelihood security was selected as dependent variable.

3.5.1 Livelihood security

Livelihood security was defined as the ability to meet basic needs like food, health, shelter and minimal levels of income, basic education and community participation (Beevi and Rohit, 2018).

3.5.2 Components of livelihood security

The components of livelihood security identified by Baby (2005) was selected for the study. The components of livelihood security are listed below along with their operational definition.

a) Food security

It was operationalized as the ability of the respondent's family to meet their nutritional needs through proper availability and accessibility of balanced food.

b) Occupational security

It was operationalized as the respondent's access to a regular and satisfying job with a stable financial condition.

a) Educational security

It was operationalized as the respondent's and their families' access to educational facilities, including higher education.

b) Habitat security

It was operationalized as the availability of housing and basic amenities.

c) Health security

It was operationally defined as the health status of the family and access to health care facilities.

d) Social security

It was operationalized as the social status of respondent's family and access to social participation.

3.5.3 Computing of livelihood security

A different number of statements made up each component of livelihood security. So, each component had different range of scores. As a result, the scores of all six components were standardized and converted to unit scores. The formula for the conversion of scores to unit score is given below,

$$U_{ij} = \frac{(Y_{ij} - Min_j)}{(Max_j - Min_j)}$$

U_{ij} = Unit score of the i^{th} respondent on j^{th} component

Y_{ij} = Value of i^{th} respondent on j^{th} component

Max_j = Maximum score on the j^{th} component

Min_j = Minimum score on the j^{th} component

Hence the score of each component of each respondent ranged from 0 to 1. The unit score thus obtained were multiplied by the number of statements given for each component in order to give different weightage for each component of the

the livelihood security. Each respondent's total livelihood security was calculated by adding their scores for all of the components.

3.6 Operationalization and measurement of independent variable

Independent variables and their measurement techniques are given in the table below.

Sl no.	Independent Variables	Measurements
1.	Age	The measurement was done according to 2011 Census
2.	Education	Scale developed by Trivedi (1963) with slight modification
3.	Annual Income	Procedure followed by Harshitha (2018)
4.	Family size	Procedure followed by Dhakar (2014) with slight modification
5.	Land holding	Procedure followed by Dhakar (2014) with slight modification
6.	Farming experience	Procedure followed by Dhakar (2014) with slight modification
7.	Mass media exposure	Procedure followed by Harshitha (2018) with slight modification
8.	Extension orientation	Procedure followed by Dhakar (2014) with slight modification
9.	Scientific orientation	Procedure followed by Supe (1963) with suitable modification made and used by Nagaraj (1989)
10.	Risk orientation	Procedure developed by Ramegowda (1991) which was followed by Harshitha (2018) with slight modification

1. Age

Refers to the number of years the respondent has completed at the time of the interview. The measurement is done according to 2011 Census. Age was recorded by directly asking the respondents.

Scoring pattern of age

Age category	Years	Score
Young	< 35	1
Middle age	35-55	2
Old age	> 55	3

2. Education

Refers to the respondent's highest level of academic achievement through formal education. Education was recorded by directly asking the respondents. Scale developed by Trivedi (1963) with slight modification was used for measurement.

Scoring pattern of education

Sl. No.	Category	Score
1	Illiterate	1
2.	Primary school	2
3.	Middle school	3
4.	High school	4
5.	College	5
6.	Graduate and above	6

3. Annual income

It refers to the total earnings of all members of the respondents' family from various sources over the course of a year, represented in rupees. Annual income was recorded by directly asking the respondents. Procedure followed by Harshitha (2018) was used for measurement.

Scoring pattern of annual income

Category	Annual income (Rs.)	Score
Low	< Rs 60,000	1
Medium	Rs 60,000 - 1 lakh	2
High	> 1 lakh	3

4. Family size

The total number of family members is referred to as the family size. It was recorded by directly asking the respondents. Procedure followed by Dhakar (2014) with slight modification was used for measurement.

Scoring pattern of family size

Category	Numbers of family members	Score
Small	Up to 4	1
Medium	5 to 7	2
Large	Above 7	3

5. Land holding

It is operationally defined as the total farm area owned or leased by the respondent. It was recorded by directly asking the respondents. Procedure followed by Dhakar (2014) with slight modification was used for measurement.

Scoring pattern of land holding

Category	Size of the land	Score
Small	Less than 0.5 acre	1
Medium	0.5 to 1 acre	2
Large	Above 1 acre	3

6. Farming experience

Farming experience is operationally defined as the respondents' years of experience in farming and related occupations. It was recorded by directly asking the respondents. Procedure followed by Dhakar (2014) with slight modification was used for measurement.

Scoring pattern of farming experience

Category	Years	Score
Low	Up to 5	1
Medium	6-8	2
High	Above 8	3

7. Mass media exposure

It refers to the extent to which respondents have been exposed to various mass media communication systems, as well as the frequency with which they use various mass media in their daily lives. Scoring procedure followed by Harshitha (2018) with slight modification was used for measurement. The scale consisted of 5 statements which were measured on a three-point continuum ranging from 'Regularly', 'Occasionally' and 'Never' with weightage of 3, 2 and 1 respectively. The scale used for data collection is enclosed in the appendix (2). The minimum and maximum score likely for each respondent was 5 and 15 respectively. The respondents were categorized into low, medium and high mass media exposure based on (Mean +/– 1 Standard deviation).

Sl. No	Items	Regular (3)	Occasionally (2)	Never (1)
1.	Newspaper			
2.	Radio			
3.	Television			
4.	Magazines or Publications			
5.	Internet			

8. Extension orientation

It is the frequency of contact with extension agencies by respondent to gather information. Scoring procedure followed by Dhakar (2014) with slight modification was used for measurement. The scale consisted of 5 statements which were measured on a three-point continuum ranging from 'Regularly', 'Occasionally' and 'Never' with weightage of 3, 2 and 1 respectively. The scale used for data collection is enclosed in the appendix (2). The minimum and maximum score likely for each respondent was 5 and 15 respectively. The respondents were categorized into low, medium and high extension orientation based on (Mean +/– 1 Standard deviation).

Sl. No.	Personnel	Frequency of contact		
		Regular (3)	Occasionally (2)	Never (1)
1.	Agricultural Assistant Officer			
2.	Agricultural Officer			
3.	Scientist			
4.	SMS of KVK			
5.	NGOs or Input dealers			

9. Scientific orientation

It was operationally defined as a respondent's commitment to using scientific methods in decision-making. Scale developed by Supe (1963) followed by Nagaraj

(1989) with suitable modification was made and used for measuring the variable. The scale consisted of 6 statements, with five positive statements and one negative statement, which were measured on a five-point continuum ranging from 'strongly agree', 'agree', 'undecided', 'disagree' and 'strongly disagree' with weightage of 5, 4, 3, 2 and 1 respectively. The weightage is given in the reverse order for negative statements. Thus, the minimum score a respondent could get was 6 and maximum score was 30. The respondents were categorized into low, medium and high scientific orientation based on (Mean +/– 1 Standard deviation).

Sl. No	**Statements**	**SA (5)**	**A (4)**	**UD (3)**	**DA (2)**	**SDA (1)**
1.	New methods of farming give better results to farm women than old methods.					
2.	The way of farming by forefathers is still the best way of farming. (-)					
3.	Even a farm woman with lots of experience should use new methods in farming.					
4.	A good farm woman experiments with new ideas in farming.					
5.	Though it takes time for farm women to learn new methods in farming, it is worth the efforts.					
6.	The traditional methods in farming have to be changed in order to raise the standard of living.					

9. Risk orientation

It measures how open a respondent is to danger and uncertainty, as well as her courage in confronting challenges. Scale developed by Ramegowda (1991) which was followed by Harshitha (2018) with slight modification. The scale consisted of 6 statements, with five positive statements and one negative statement, which were measured on a two-point continuum ranging from 'agree' and 'disagree' with weightage of 2 and 1 respectively. Thus, the minimum score a respondent could get

was 6 and maximum score was 12. The respondents were categorized into low, medium and high risk orientation based on (Mean +/– 1 Standard deviation).

Sl. No	Statements	Agree (2)	Disagree (1)
1.	A farm woman should grow large number of crops to avoid greater risk involved in growing one or two crops		
2.	She should rather take more of a chance in making a big profit than to be content with a smaller but less profit		
3.	A farm woman who is willing to take greater risk than the average farm women usually does better financially		
4.	It is good for a farm woman to take risk when she knows her chance to success is fairly high		
5.	It is better for a farm woman not to try new farming methods unless most others have used them with success (-)		
6.	Trying an entirely new methods in farming involves risk but it is worth.		

3.7 Availability and access of resources and infrastructural facilities

It refers to availability and access of the respondent to private and public resources. Infrastructural facilities refers to the basic facilities provided by physical structures that are required for a society's operation. They include technological infrastructure that sustain a society, such as roads, water supply, electricity, tele-communications, and so forth. For finding out, 24 indicator statements were used with a two-point continuum ranging from 'Yes' and 'No' with weightage of 1 and 0 respectively. All the respondents were categorised into three groups, viz., low, medium and high.

3.8 Constraints faced by the farm women

Constraints experienced by the farm women were identified based on the discussion. During the direct interview, respondents were asked to mention the constraints they faced. The ranks were analyzed using Garrett ranking technique. Garrett table was used to convert the percentage position of each rank into scores.

Individual respondents' scores were added together and divided by the total number of respondents whose scores were combined for each constraint. As a result, each constraint's mean score was ranked in descending order. Based on the findings of the research, suggestions were proposed to overcome the constraints faced by the respondents.

3.9 Data collection methods and tools

For data collection, an interview schedule was created after consultation with specialists in order to meet the study's objective. Data collection was carried out through structured interview.

3.10 Statistical tools used

3.10.1 Mean and Standard deviation

The sum of all observations divided by the total number of observations is the arithmetic mean. The positive square root of the mean of the squared deviation subtracted from the arithmetic mean is used to calculate standard deviation. Mean and standard deviation were used to classify the respondents into low, medium and high categories.

Classification of respondents into low, medium and high

Sl. No	Category	Range of Score
1	Low	< (Mean – 1SD)
2	Medium	(Mean+/- 1SD)
3	High	> (Mean+1SD)

3.10.2 Frequency and per centage analysis

The selected variables were studied and analyzed using frequency and per centage analysis. After calculation of the frequency by counting the number of times the data was repeated, per centage was obtained by dividing it with the number of respondents and further multiplying it with 100.

3.10.3 Karl Pearson correlation coefficient

Correlation coefficient (r) helps to understand the strength and direction of relationship between the variables. In this study, correlation coefficient was used to understand the strength and direction of relationship between livelihood security and the 10 personal and socio-economic characters under study.

3.10.4 Principal Component Analysis (PCA)

PCA is a method of data reduction. It helps to visualize the data. PCA helps to analyze all the variance in the variables and to reorganize into a new set of components equal to the number of original variables. PCA was used to find the contribution of each component of the livelihood security to livelihood security.

3.10.5 Mann Whitney U test

Mann Whitney U test is a non-parametric test that compares two sample means from the same population and determines whether the two sample means are equal. It was utilized to compare the differences between Kerala and Manipur in terms of livelihood security components.

3.10.6 Garrett Ranking

It was used to rank the preference indicated by the respondents on different factors. In this study, Garrett ranking was used to rank the constraints faced by the farm women. The ranks assigned by members were converted into scores by using Garretts' ranking technique.

$$\text{Per cent Position} = 100\ (R_{ij} - 0.50) / N_j$$

Where, R_{ij} = Rank given for the i^{th} factor by j^{th} individual

N_j = Number of problems ranked by j^{th} individual

Further, per cent position obtained were converted into scores using the table given by Garrett. The scores of various respondents were added and mean value were calculated. The mean values were arranged in descending order.

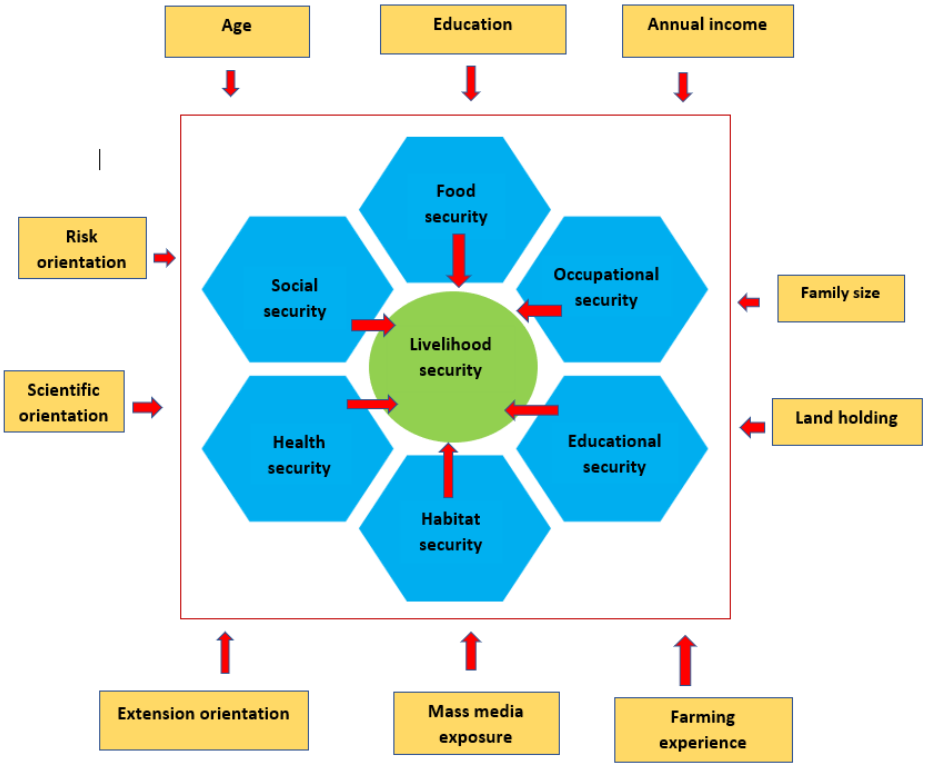

Plate 3. Conceptual framework of the study

Results and discussion

CHAPTER 4

RESULTS AND DISCUSSION

The acquired data were analysed using appropriate statistical tools and analytical procedures in light of the study's aims, and the results have been discussed in this chapter, titled 'Results and Discussion.' The findings and their interpretations have been organised under the headings below:

4.1 General profile of the farm women

4.2 Livelihood security of farm women

4.3 Availability and accessibility of resources and infrastructure

4.4 Correlation between livelihood security and independent variables

4.5 Contribution of the principal components to the variance in livelihood security

4.6 Comparison of the components of livelihood security

4.7 Constraints faced by the farm women and suggestive measures in achieving livelihood security

4.8 Formulation of sustainable livelihood security framework

4.9. Empirical model of the study

4.10 Future lines of research

4.11 Recommendations of the study

4.1 General profile of the farm women

According to the independent variables of 'Livelihood Security,' the general profile of the respondents emphasises the most important qualities of the respondents. Farm women with a secure livelihood were investigated and quantified in terms of their personal and socio-psychological characteristics. The variables include age, education, annual income, family size, land holding, farming experience, mass media exposure,

extension orientation, scientific orientation and risk orientation. The result and their interpretations are explained under separate headings.

4.1.1 Age

The respondent's age was operationally defined as the number of years completed at the time of the interview. The respondents were divided into three groups: young, middle-age, and old age. Table 1 shows the age distribution of the respondents.

Table 1. Distribution of farm women based on their age

Age category	Years	Kerala (n= 45)		Manipur (n= 45)	
		Frequency	Percentage	Frequency	Percentage
Young	<35	7	15.55	6	13
Middle Age	35 - 55	26	57.78	28	62
Old Age	>55	12	26.67	11	24

Table 1 shows that middle-age women made up 57.78 percent and 62 percent of farm women in Kerala and Manipur, respectively. In Kerala and Manipur, 26.67 percent and 24 percent of the respondents belonged to the old age group, while 15.55 percent and 13 percent of the respondents belonged to the young age group. It can be observed that the middle age farm women of Manipur have higher proportion than that of Kerala and further it can be explained that the proportion of young and old age is higher in Kerala compared to Manipur. This was in confirmation with the study on participation of farm women in farming by Padmavathi (2002).

4.1.2 Education

It refers to the respondent's highest level of academic achievement through formal education at the time of interview. The respondents were classified into six categories: illiterate, primary school, middle school, high school, college, graduate and above. Table 2 shows the education distribution of the respondents.

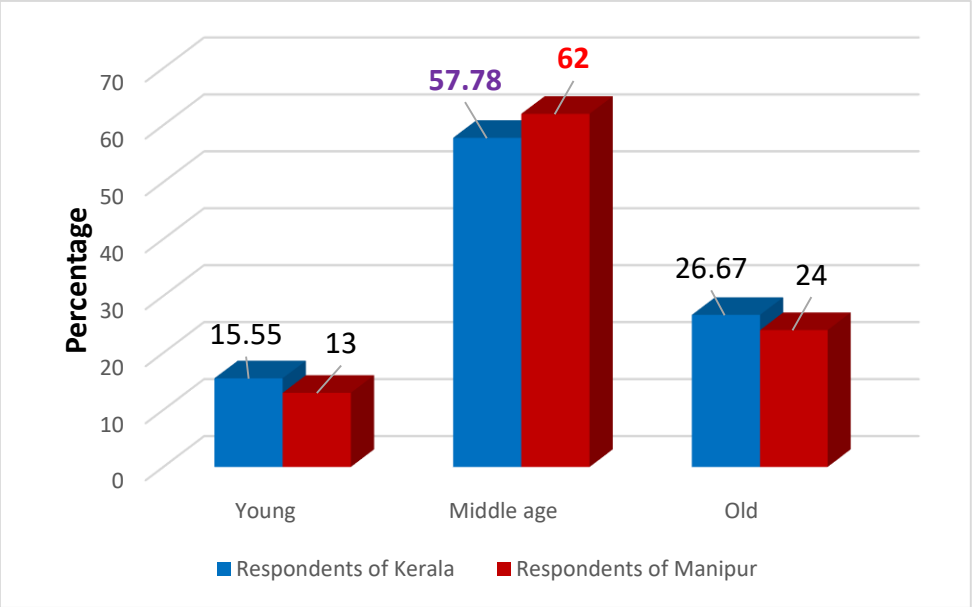

Fig 1. Distribution of farm women based on their age

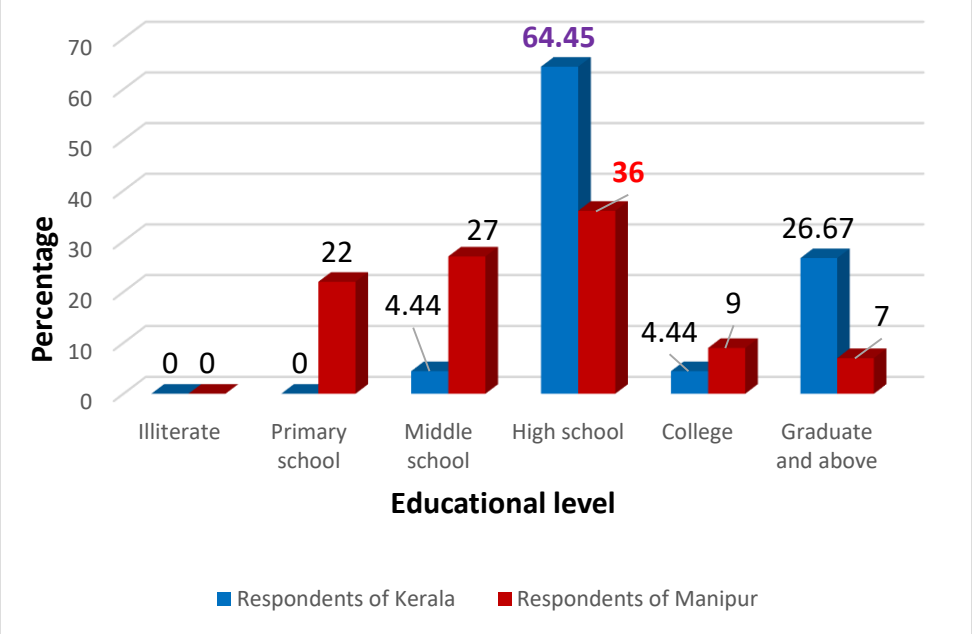

Fig 2. Distribution of farm women based on education

Table 2. Distribution of farm women based on their education

Category	Kerala (n= 45)		Manipur (n= 45)	
	Frequency	**Percentage**	**Frequency**	**Percentage**
Illiterate	0	0	0	0
Primary school	0	0	10	22
Middle school	2	4.44	12	27
High school	29	64.45	16	36
College	2	4.44	4	9
Graduate and above	12	26.67	3	7

It is clear from the Table 2 that 64.45 per cent and 36 per cent of the respondents had education up to high school in Kerala and Manipur, 4.44 per cent and 27 per cent of the respondents had education up to middle school, 26.67 per cent and 7 per cent had education up to graduate and above, 4.44 per cent and 9 per cent of the respondents had education up to college level followed by 0 per cent and 22 per cent had education up to primary school. This result is in agreement with the study on entrepreneurial behavior of Farmer Producer Organization (FPO) members for livelihood security (Asha, 2020).

The analysis of general educational level among the respondents revealed that education up to high school and graduate and above was quite high in the sample population of Kerala (64.45 and 26.67 per cent) as compared to Manipur (35.56 and 6.67 per cent). As Kerala has high literacy rate compared to Manipur, the educational status of farm women of Kerala is higher than Manipur. Well established network of schools focusing on primary and continuing education promoting equal educational status for women is observed in Kerala. But at the same time, due to the existing unemployment problem, it is a common trend that those who are willing to work in farming sector are choosing farming and related activities.

4.1.3 Annual income

It refers to the total earnings of all members of the respondents' family from various sources over the course of a year, represented in rupees. The respondents were

divided into three categories: low, medium and high. Table 2 shows the distribution of the respondents based on their annual income.

Table 3. Distribution of farm women based on their annual income

Category	Annual income (Rs)	Kerala (n= 45)		Manipur (n= 45)	
		Frequency	Percentage	Frequency	Percentage
Low	<Rs 60,000	22	48.89	24	53.33
Medium	Rs 60,000 – 1 lakh	20	44.44	13	28.89
High	>Rs 1 lakh	3	6.67	8	17.78

According to Table 3, 48.89% of respondents in Kerala were in the low-income group, while 44.44 percent were in the medium-income group, followed by the high-income group (6.67 per cent). In Manipur, however, the majority of farm women (53.33%) were in the low-income group, followed by the medium-income group (28.89%), and only a few respondents (17.78%) in the high-income group. The findings are in line with Savitha (2004) in her study on role of rural woman in animal husbandry.

4.1.4 Family size

Family size refers to the total of numbers of members residing in the family. The respondents were categorized into three categories: small, medium and large. Distribution of respondents according to family size is presented in Table 4.

Table 4. Distribution of farm women based on family size

Category	Number of family members	Kerala (n= 45)		Manipur (n= 45)	
		Frequency	Percentage	Frequency	Percentage
Small	Up to 4	25	55.56	16	36
Medium	5 to 7	16	35.56	26	58

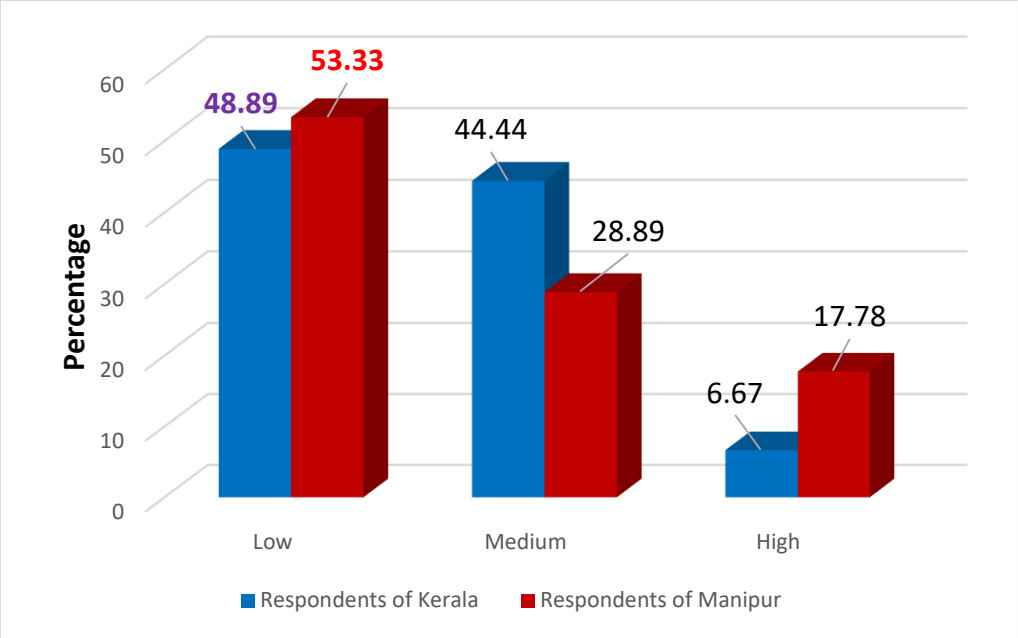

Fig 3. Distribution of farm women based on annual income

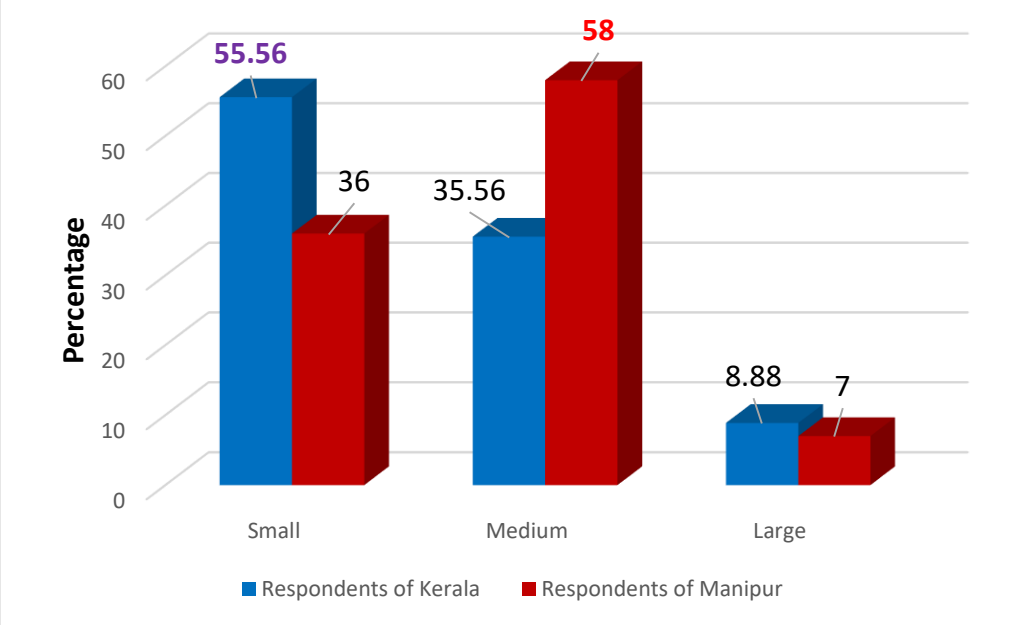

Fig 4. Distribution of farm women based on family size

Large	Above 7	4	8.88	3	7

According to the data in Table 4, majority of farm women in Kerala (55.56%) have up to four children, while 35.56 percent have five to seven children, and 8.88 percent have more than seven children. In Manipur, on the other hand, the majority (58%) of respondents had five to seven individuals in their families, while 36% had up to four members and 7% had more than seven. The results of Kerala were in agreement with Kaur (2019) in his study on comparative study on livelihood security of small and marginal farm households. Also, the results of Manipur were in line with the findings Rai (2015) in his study on agricultural diversification for livelihood security of rural people.

4.1.5 Land holding

Land holding was operationally defined as the total farm area owned or leased by the respondent. The respondents were divided into three categories: small, medium and large. Table 5 shows the distribution of the respondents based on their land holding.

Table 5. Distribution of farm women based on land holding

Category	**Size of land**	**Kerala (n= 45)**		**Manipur (n= 45)**	
		Frequency	**Percentage**	**Frequency**	**Percentage**
Small	Up to 0.5 acre	29	64.44	5	11
Medium	0.5 to 1 acre	4	8.89	12	27
Large	Above 1 acre	12	26.67	28	62

According to Table 5, majority of farm women in Kerala (64.44%) are in the small land holding group, followed by large (26.67%) and only a few respondents (8.89%) in the medium land holding category. In Manipur, however, 62 percent of respondents are under large land holding category, while 27 percent under medium category, followed by the small category (11 per cent). The findings matched with the study of Jodha (2018), who investigated the livelihood security of small and marginal farm families.

4.1.6 Farming experience

Farming experience was operationally defined as the respondents' years of experience in farming and related occupations. The farm women were divided into three groups: low, medium, and high. Distribution of respondents according to farming experience is presented in Table 6.

Table 6. Distribution of farm women based on farming experience

Category	Years	Kerala (n= 45)		Manipur (n= 45)	
		Frequency	Percentage	Frequency	Percentage
Low	Up to 5	9	20	2	4
Medium	6 to 8	2	4.44	5	11
High	Above 8	34	75.56	38	84

According to the results in Table 6, majority of farm women in Kerala (75.56%) were found under high farming experience category, followed by low (20%) and only a few respondents (4.44%) were under medium category. In Manipur, 84 percent of respondents had a high level of farming expertise, while 11 percent had a medium level of experience, and the remaining 4 percent had a low level of experience.

4.1.7. Mass media exposure

It refers to the respondents' exposure to various mass media communication systems as well as their frequency of use of various mass media in their daily lives. The respondents were divided into three groups: low, medium, and high. Table 7 shows the distribution of respondents based on their mass media exposure.

Table 7. Distribution of farm women based on mass media exposure

Category	Kerala (n= 45)		Manipur (n= 45)	
	Frequency	Percentage	Frequency	Percentage
Low (< 8.48, < 5.81)	6	13.33	15	33.33
Medium (8.49 – 13.92, 5.82 – 9.75)	30	66.67	28	62.22
High (> 13.93, > 9.76)	9	20	2	4.45

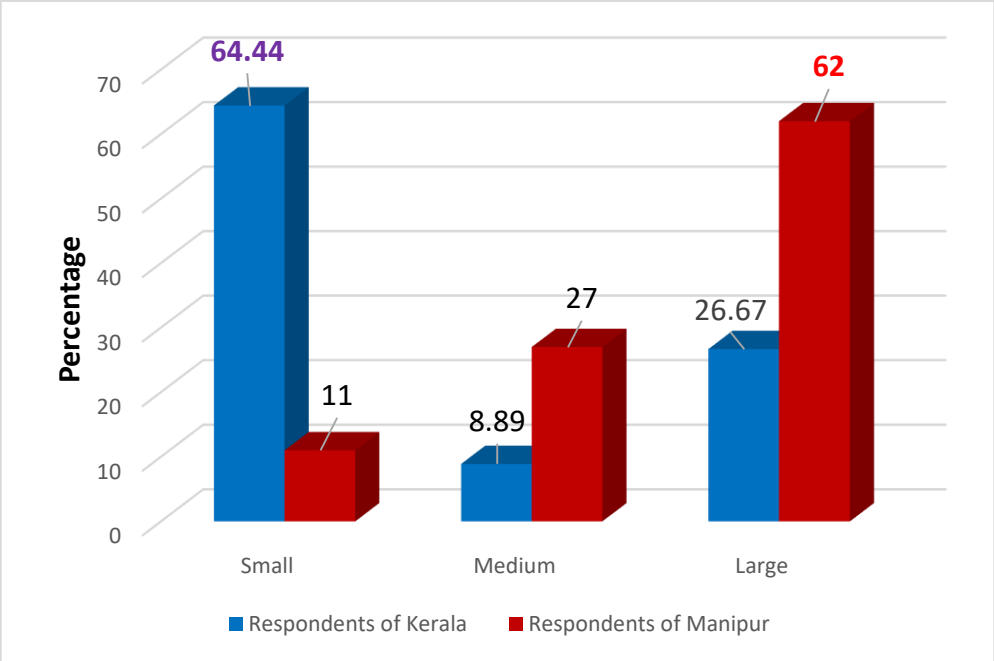

Fig 5. Distribution of farm women based on land holding

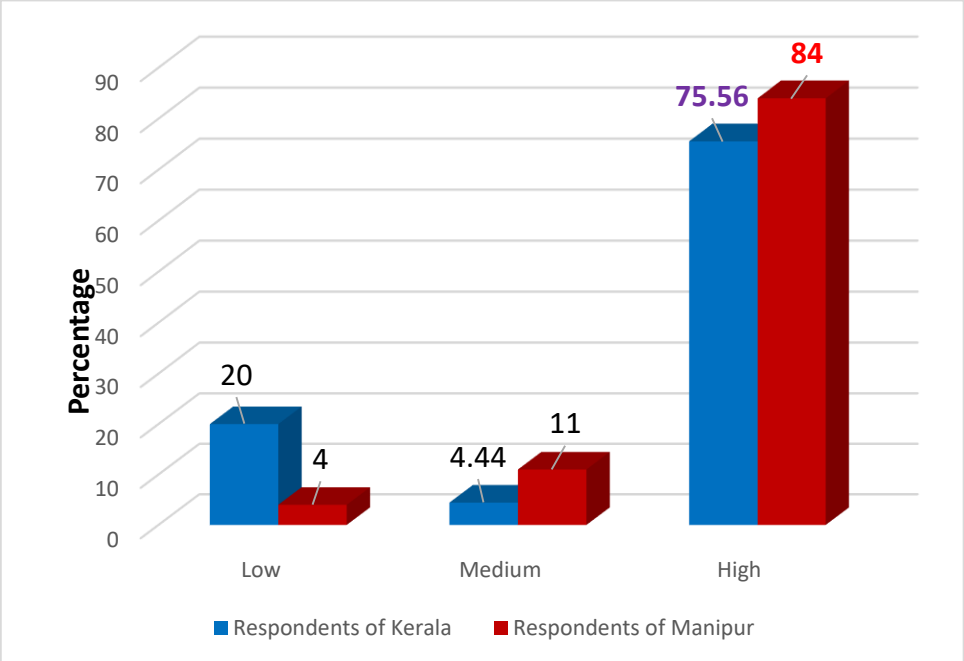

Fig 6. Distribution of farm women based on farming experience

Mean- (11.2, 7.78) SD- (2.72, 1.98)

According to the results in Table 7, majority of the farm women in Kerala (66.67%) were found under medium mass media exposure category, followed by high (20%) and low (13.33%). In Manipur, however, 62.22 percent of respondents were found under medium mass media exposure category, while 33.33 percent were under low category, followed by the high category (4.45 per cent). Further, it can be observed that the farm women of Kerala have high mass media exposure contributing 20 per cent which is higher than that of Manipur.The result is in line with the findings of Dhakar (2014) in his study on assessment of sustainable livelihood of rural women through income generating activities in Satna district.

4.1.8. Extension orientation

It was operationally defined as the frequency with which respondents contacted extension agencies to acquire information. The respondents were divided into three groups: low, medium, and high. Table 8 shows the distribution of responders based on their extension orientation.

Table 8. Distribution of farm women based on extension orientation

Category	Kerala (n= 45)		Manipur (n= 45)	
	Frequency	**Percentage**	**Frequency**	**Percentage**
Low (< 6.61, < 5.18)	0	0	13	28.89
Medium (6.62 – 10.27, 5.19 – 11.48)	34	75.56	24	53.33
High (> 10.28, > 11.49)	11	24.44	8	17.78
Mean- (8.44, 8.33) SD- (1.84, 3.16)				

According to Table 8, the majority of farm women in Kerala (75.56%) fall into the medium extension orientation category, followed by high (24.44%), and none of the respondents fall into the low extension orientation category. In Manipur, 53.33 percent

of respondents fell into the medium extension orientation category, while 28.89 percent fell into the low category, followed by the high category (17.78 per cent). Further, it can be observed that the farm women of Kerala have high extension orientation contributing 24.44 per cent which is higher than that of Manipur. Chouhan (2013) found similar results in a study on the role of farm women in vegetable cultivation decision-making. The conclusions of Lavanya (2010) in her study on the effectiveness of farming systems in Theni area of Tamil Nadu are similarly in agreement with the findings of this study.

4.1.9. Scientific orientation

It was operationally defined as the respondent's commitment to using scientific methods in decision-making. It was divided into three levels: low, medium, and high. Table 9 shows the distribution of respondents based on their scientific orientation.

Table 9 Distribution of farm women based on scientific orientation

Category	Kerala (n= 45)		Manipur (n= 45)	
	Frequency	**Percentage**	**Frequency**	**Percentage**
Low (< 20.27, < 19.55)	9	20	10	22.22
Medium (20.28 – 26.9, 19.56 – 26.3)	29	64.44	32	71.11
High (> 27, > 26.4)	7	15.56	3	6.67
Mean- (23.6, 22.9) SD- (3.35, 3.36)				

According to the data in Table 9, the majority of farm women in Kerala (64.44%) fall into the medium scientific oriented category, followed by low (20%) and high (15.56%. In Manipur, however, 71.11 percent of respondents fell into the medium scientific orientation category, while 22.22 percent fell into the low category, followed by the high category (6.67 per cent). Furthermore, Kerala farm women have a greater scientific orientation, contributing 15.56 percent, which is higher than Manipur farm women. Kerala's findings are consistent with that of Saha (2008), who conducted a study on the sustainability of farming systems and livelihood security among rural

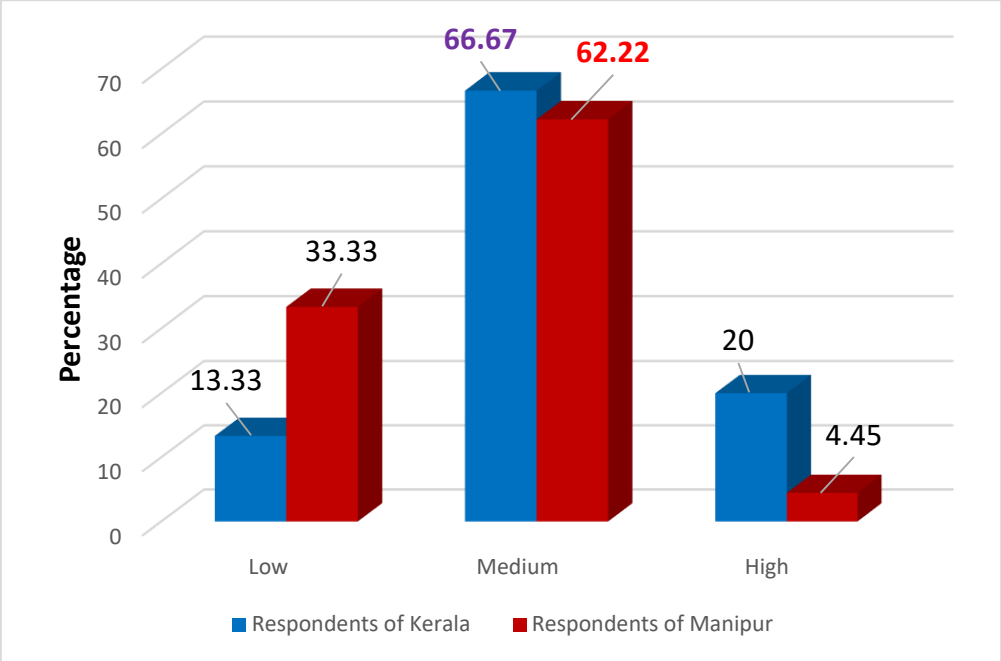

Fig 7. Distribution of farm women based on mass media exposure

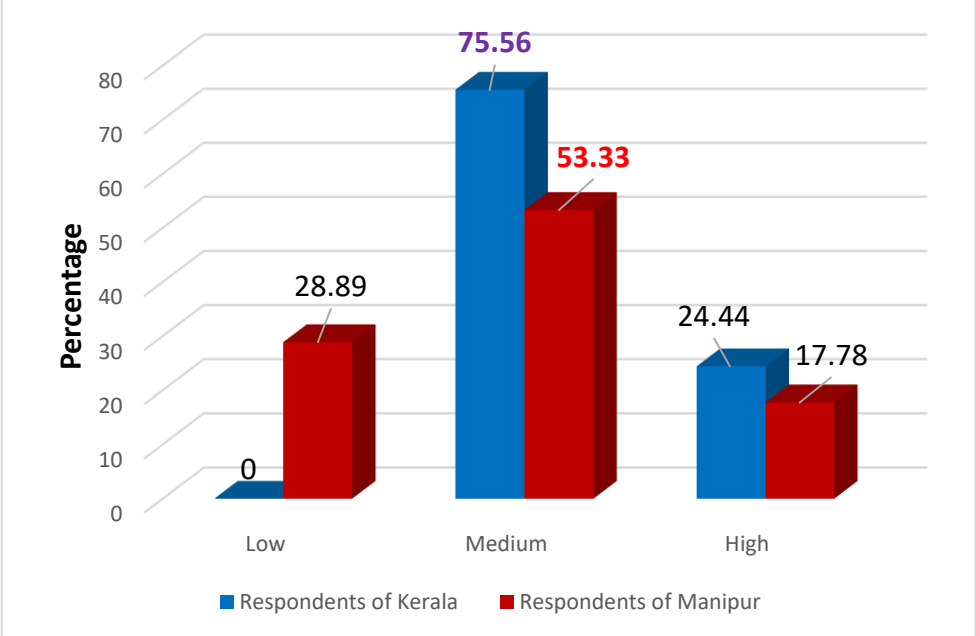

Fig 8. Distribution of farm women based on extension orientation

communities. The result of Manipur is in line with the findings of Hanglem (2017) in her study on organic farming in Manipur.

4.1.10. Risk orientation

It refers to how open a respondent is to risk and uncertainty, as well as her willingness to tackle the challenges she faces. It was categorised into three levels: low, medium, and high. Table 10 shows the distribution of respondents based on risk orientation.

Table 10. Distribution of farm women based on risk orientation

Category	Kerala (n= 45)		Manipur (n= 45)	
	Frequency	**Percentage**	**Frequency**	**Percentage**
Low (< 8.85, < 9.14)	2	4.44	14	31.11
Medium (8.86 – 10.9, 9.15 – 12.37)	34	75.56	31	68.69
High (> 11, > 12.38)	9	20	0	0
Mean- (9.85, 10.76) SD- (0.99, 1.61)				

According to Table 10, majority of farm women in Kerala (75.56%) fall into the medium risk orientation category, followed by high (20%) and low (4.44%) risk orientation categories. In Manipur, half of the respondents (68.89%) were classified as having a medium risk orientation, followed by low (31.11%) and high risk orientations (0 percent). Further, it can be observed that the farm women of Kerala have higher risk orientation contributing 20 per cent which is higher than that of Manipur. The findings are consistent with Dhakar's (2014) findings in his study on the assessment of rural women's sustainable living through income-generating activities.

4.2 Livelihood Security of farm women

The dimensions of livelihood security identified by Baby (2005) was selected for the study. The components of livelihood security were food security, occupational security, educational security, habitat security, health security and social security. Each component of livelihood security has a different number of statements. So, each component had different range of scores. Therefore, it was necessary to standardize and

convert the scores of all the six components into unit scores. Hence the score of each component of each respondent ranged from 0 to 1. The unit score thus obtained were multiplied by the number of statements given for each component in order to give different weightage for each component of the livelihood security. The total livelihood security of each respondent was calculated by adding the scores obtained for all of the components.

Table 11. Distribution of farm women based on food security

Category	Kerala (n= 45)		Manipur (n= 45)	
	Frequency	Percentage	Frequency	Percentage
Low (< 3.24, < 1.79)	4	8.89	7	15.56
Medium (3.25 – 5.21, 1.8 – 4.54)	23	51.11	29	64.44
High (> 5.22, > 4.55)	18	40	9	20
Mean- (4.23, 3.17) SD- (0.99, 1.38)				

Table 11 shows that medium food security was reported by 51.11 percent of respondents in Kerala, with high and low food security being reported by 40% and 8.89 percent of respondents, respectively. In Manipur, however, the majority of respondents (64.44 percent) reported medium food security, with 20% and 15.56 percent reporting high and low food security, respectively. The farm women of Kerala have higher food security than Manipur due to the reasons that there is improved agricultural productivity owing to adequate resources and markets, adequate distribution of food through public distribution mechanisms, access to balanced diet and improved nutrition. This result is in agreement with the study on entrepreneurial behavior of Farmer Producer Organization (FPO) members for livelihood security (Asha, 2020).

Table 12. Distribution of farm women based on occupational security

Category	Kerala (n= 45)		Manipur (n= 45)	
	Frequency	Percentage	Frequency	Percentage
Low (< 5.81, < 7.32)	3	6.67	8	17.78

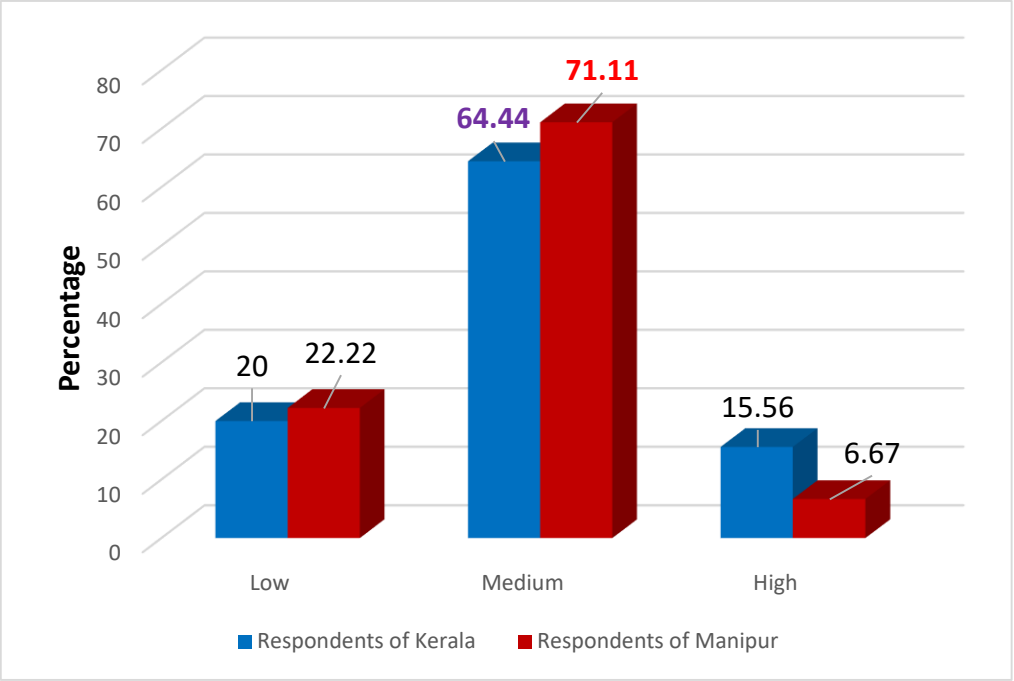

Fig 9. Distribution of farm women based on scientific orientation

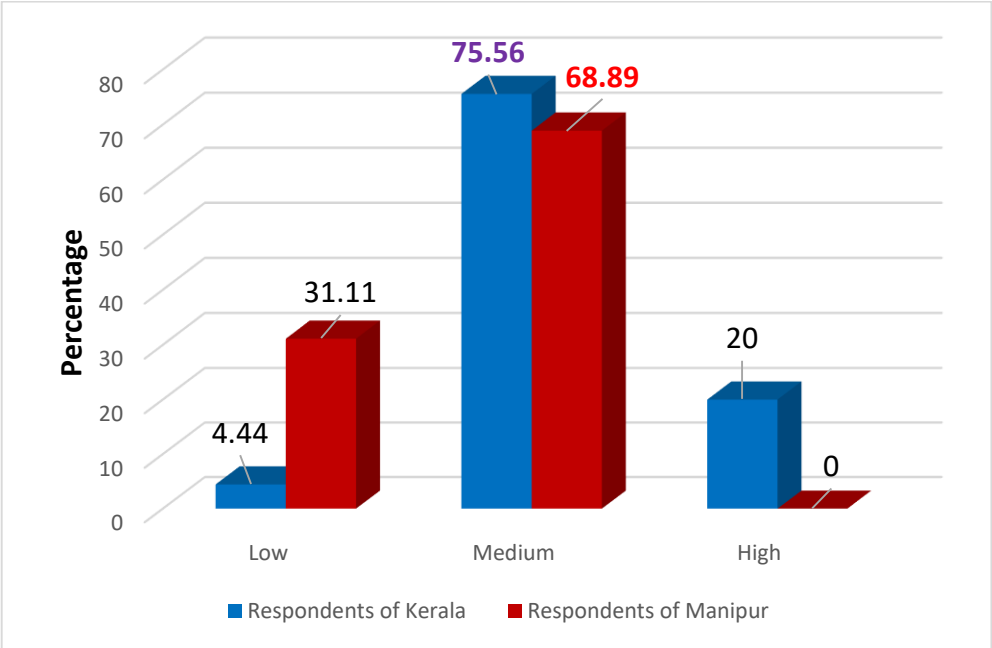

Fig 10. Distribution of farm women based on risk orientation

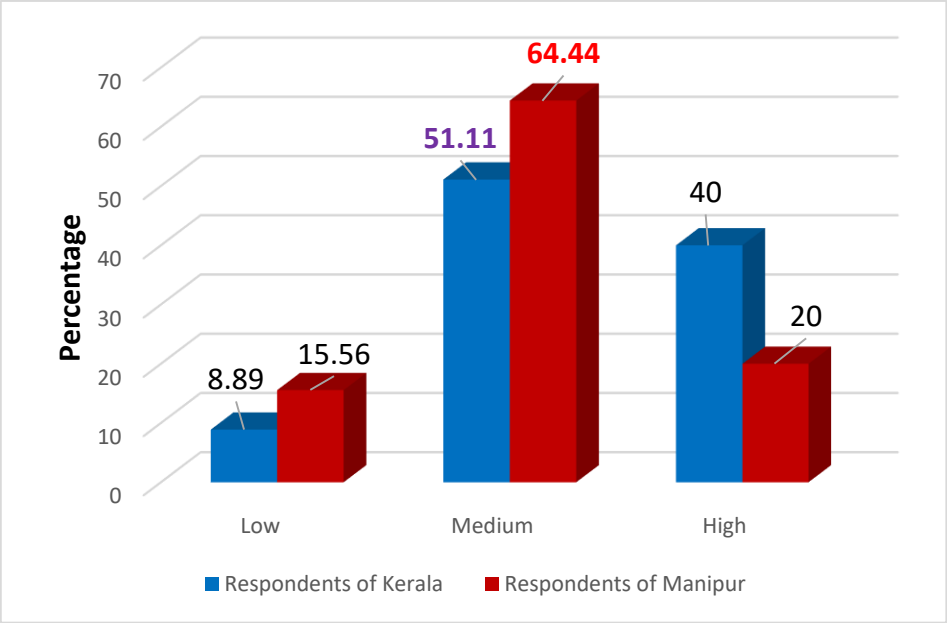

Fig 11. Distribution of farm women based on food security

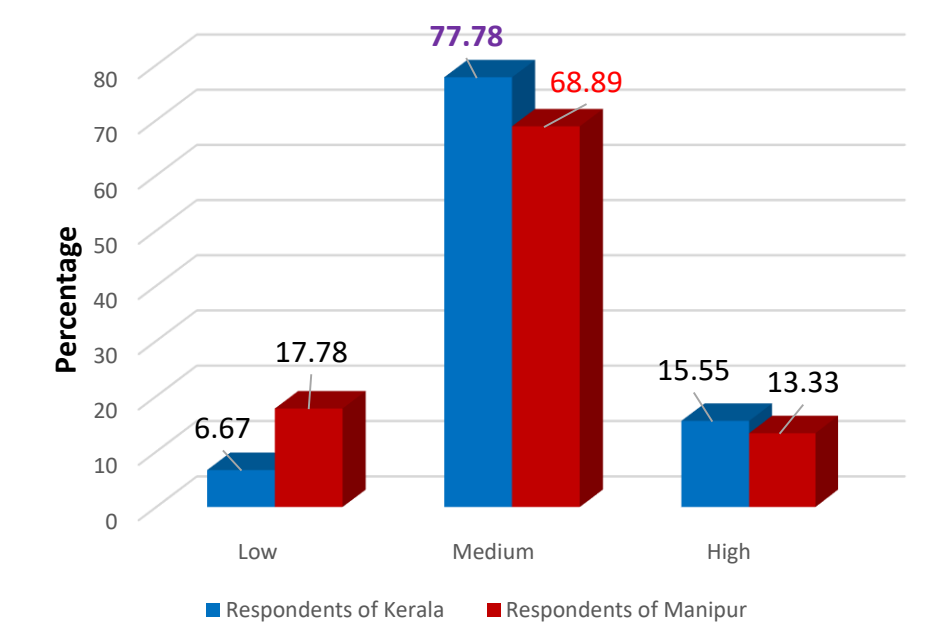

Fig 12. Distribution of farm women based on occupational security

Medium (5.82 – 8.36, 7.33 – 9.25)	35	77.78	31	68.89
High (> 8.37, > 9.26)	7	15.55	6	13.33
Mean- (7.09, 8.29) SD- (1.28, 0.97)				

Table 12 shows that in Kerala, 77.78 percent of respondents had medium occupational security, followed by 15.55 percent and 6.67 percent of respondents who had high and low occupational security, respectively. In Manipur, however, the majority of respondents (68.89%) had medium occupational security, followed by 17.78% and 13.333% of respondents with low and high occupational security, respectively. Respondents' occupational security was defined as having regular and satisfying work while also being in good financial shape. Kerala's respondents were heavily interested in farming and related activities. This guaranteed them a steady job in farming, which could explain their high occupational security. The findings of this study correspond with Hridya (2018), who conducted a study on the livelihood security of women agripreneurs in Kerala.

Table 13. Distribution of farm women based on educational security

Category	**Kerala (n= 45)**		**Manipur (n= 45)**	
	Frequency	**Percentage**	**Frequency**	**Percentage**
Low (< 8.05, < 6.96)	7	15.56	10	22.22
Medium (8.06 – 11.40, 6.97 – 10.31)	32	71.11	33	73.33
High (> 11.41, > 10.32)	6	13.33	2	4.45
Mean- (9.73, 8.64) SD- (1.68, 1.68)				

Table 13 shows that in Kerala, 71.11 percent of respondents had medium educational security, followed by 15.56 percent and 13.33 percent of respondents who had less and high educational security, respectively. In Manipur, however, the majority

of respondents (73.33 percent) had medium educational security, with 22.22 percent and 4.45 percent having less and high educational security, respectively. Kerala has high literacy rate and well established network of schools focusing on primary and continuing education promoting equal educational status for women. This finding is consistent with the study on entrepreneurial behavior of Farmer Producer Organization (FPO) members for livelihood security (Asha, 2020).

Table 14. Distribution of farm women based on habitat security

Category	Kerala (n= 45)		Manipur (n= 45)	
	Frequency	**Percentage**	**Frequency**	**Percentage**
Low (< 8.32, < 8.6)	5	11.11	8	17.78
Medium (8.33 – 10.2, 8.7 – 10.15)	31	68.89	30	66.67
High (> 10.3, > 10.16)	9	20	7	15.55
Mean- (9.31, 9.38) SD- (0.99, 0.78)				

Table 14 shows that in Kerala, 68.89% of respondents had medium habitat security, followed by 20% and 11.111% of respondents with high and less habitat security, respectively. In Manipur, however, majority of respondents (66.67 percent) had medium habitat security, with 17.78 percent and 15.55 percent having less and high habitat security, respectively. The availability of homes and essential facilities was indicated by habitat security. In Kerala, the majority of respondents had toilets, running water, and electricity in their homes. The findings of this study correspond with Hridya (2018), who conducted a study on the livelihood security of women agripreneurs in Kerala.

Table 15. Distribution of farm women based on health security

Category	Kerala (n= 45)		Manipur (n= 45)	
	Frequency	**Percentage**	**Frequency**	**Percentage**
Low (< 4.07, < 0.94)	3	6.67	4	8.89

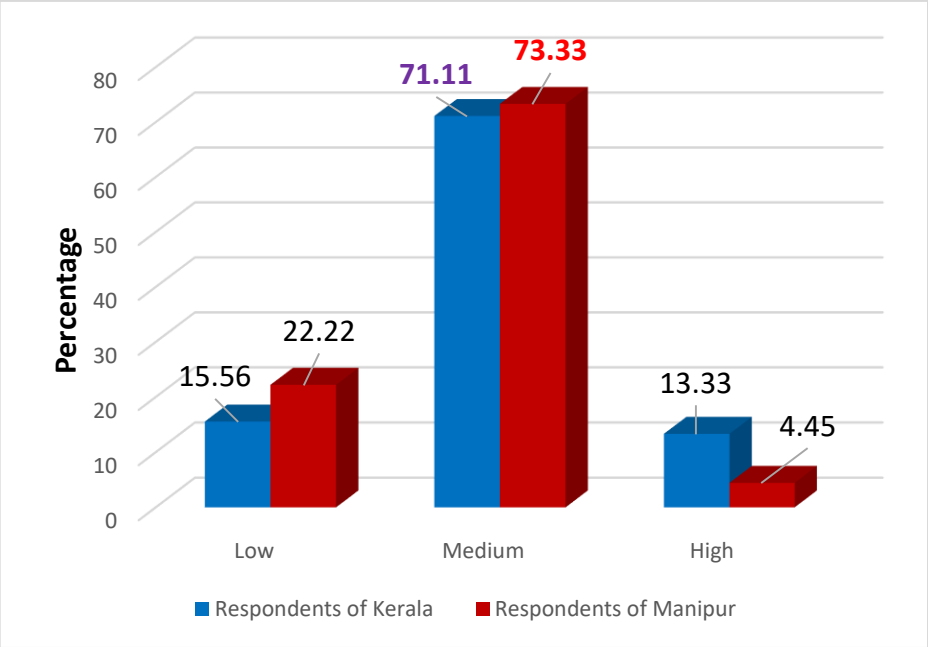

Fig 13. Distribution of farm women based on educational security

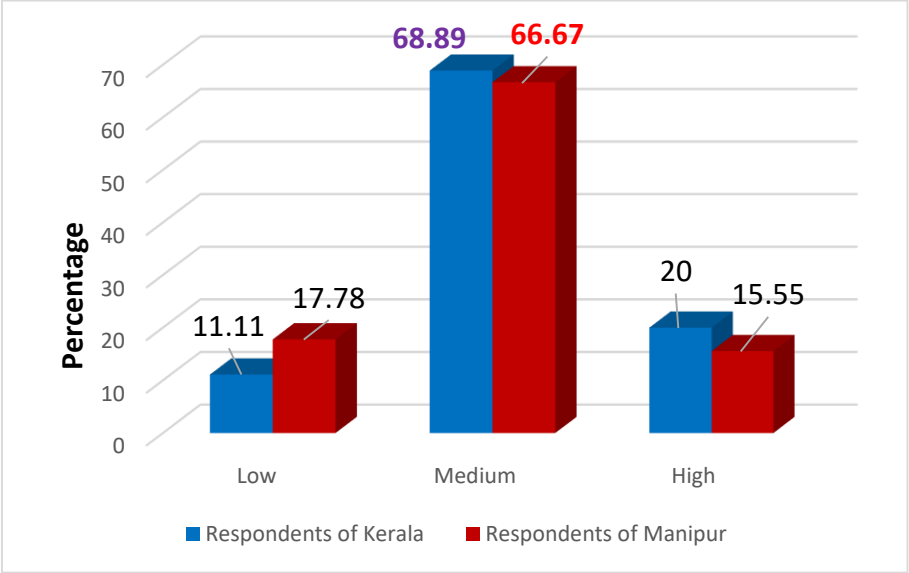

Fig 14. Distribution of farm women based on habitat security

Medium (0.48 – 6.36, 0.95 – 4.2)	25	55.55	34	75.56
High (> 6.37, > 4.3)	17	37.78	7	15.55
Mean- (5.22, 2.62) SD- (1.15, 1.68)				

Table 15 shows that in Kerala, 55.55 percent of respondents experienced medium health security, with 37.78 percent having high health security and 6.67 percent having low health security, respectively. In Manipur, however, the majority of respondents (75.56 percent) had medium health security, with 15.55 percent and 8.89 percent having high and low health security, respectively. Health security is indicated by the health status of the family and access to health care facilities. It is a fact that the health sector of Kerala is very advanced and well maintained with adequate medical facilities compared to other states in India. This finding is consistent with the study on entrepreneurial behavior of Farmer Producer Organization (FPO) members for livelihood security (Asha, 2020).

Table 16. Distribution of farm women based on social security

Category	**Kerala (n= 45)**		**Manipur (n= 45)**	
	Frequency	**Percentage**	**Frequency**	**Percentage**
Low (< 3.72, < 5.88)	14	31.11	10	22.22
Medium (3.73 – 7.6, 5.89 – 9.17)	20	44.45	21	46.67
High (> 7.7, > 9.18)	11	24.44	14	31.11
Mean- (5.71, 7.53) SD- (1.99, 1.65)				

Table 16 shows that 44.45% of respondents in Kerala had medium social security, with 31.11 percent and 24.44 percent having less and high social security, respectively. In Manipur, however, the majority of respondents (46.67 percent) had medium social security, with 31.11 percent and 22.22 percent having high and low

social security, respectively. This finding is in line with the study on entrepreneurial behavior of Farmer Producer Organization (FPO) members for livelihood security (Asha, 2020). The respondents in Manipur were found to have good access to social participation. Manipur is known for its high and active social participation rates among women. They've earned a reputation for their ability and active participation in a variety of social, economic, political, and cultural activities.

Table 17. Distribution of respondents based on livelihood security

Category	Kerala (n= 45)		Manipur (n= 45)	
	Frequency	**Percentage**	**Frequency**	**Percentage**
Low (< 18.24, < 24.69)	5	11.11	6	13.33
Medium (18.25 – 20.01, 24.70 – 25.70)	27	60	31	68.89
High (> 20.02, > 25.71)	13	28.89	8	17.78
Mean- (19.13, 25.2) SD- (0.89, 0.509)				

According to the table, 60 percent of respondents in Kerala had a medium secure livelihood, with 28.89 percent having a high secure livelihood and 11.11 percent having a less secure lifestyle, respectively. In Manipur, the majority of respondents (68.89 percent) had a medium secure livelihood, with 17.78 and 13.33 percent having a high and less secure living, respectively. The majority of respondents in Kerala and Manipur had a medium degree of family size, mass media exposure, extension orientation, scientific orientation, and risk orientation, which could be the explanation for medium followed by high and less secure livelihood. This outcome is in line with a study on Farmer Producer Organization members' entrepreneurial behaviour for livelihood security (Asha,2020).

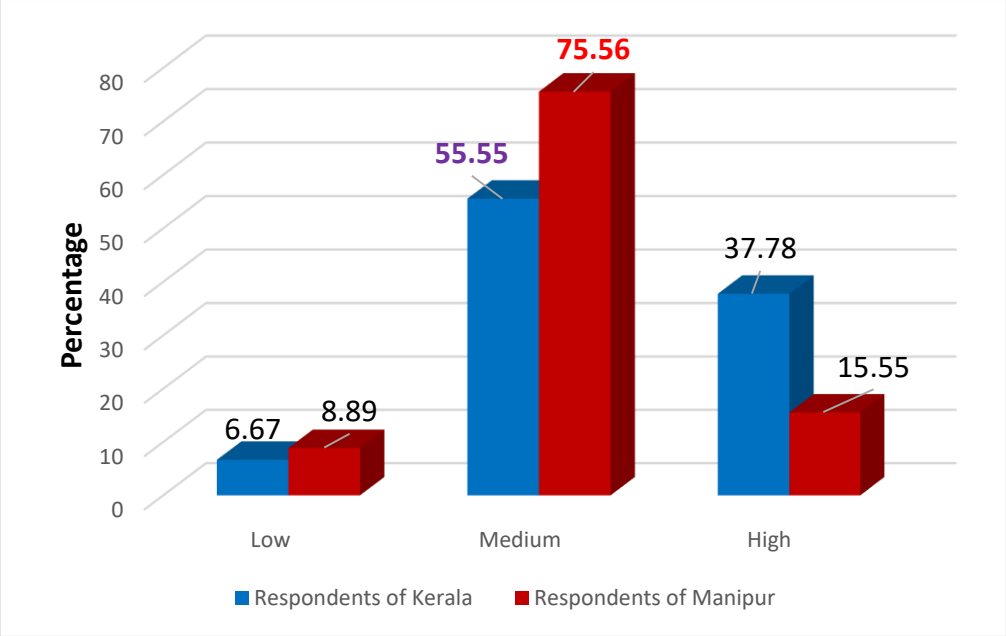

Fig 15. Distribution of farm women based on health security

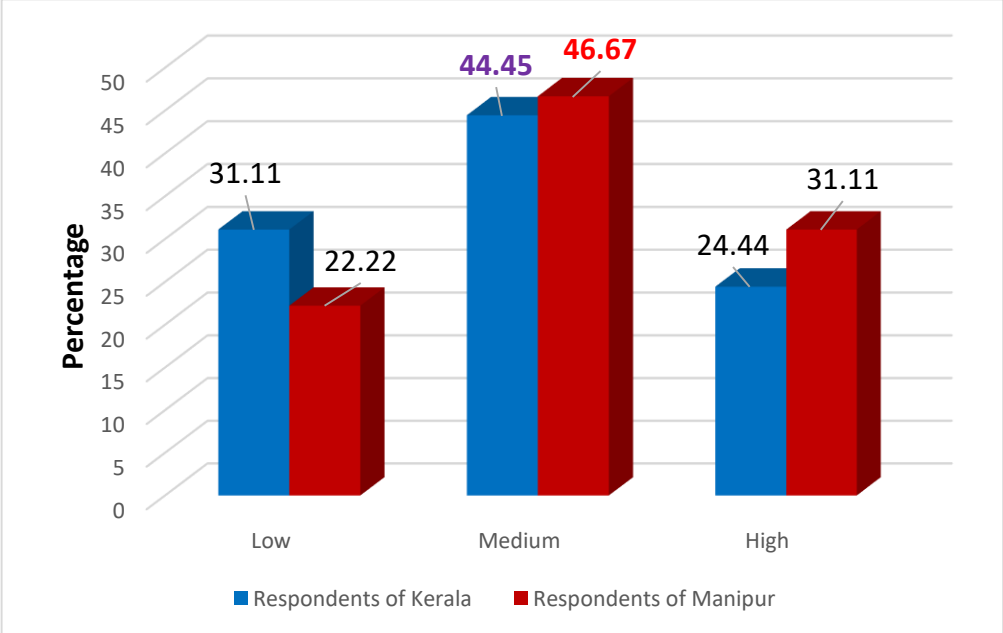

Fig 16. Distribution of farm women based on social security

4.3 Availability and accessibility of resources and infrastructure

Table 18. Distribution of farm women on the basis of availability and accessibility of resources and infrastructure

Category	Kerala (n= 45)		Manipur (n= 45)	
	Frequency	Percentage	Frequency	Percentage
Low (< 34.66, < 30.04)	9	20	10	22.22
Medium (34.67 – 42.98, 30.05 – 35.91)	25	55.56	27	60
High (> 42.99, > 35.92)	11	24.44	8	17.78
Mean- (38.82, 32.98) SD- (4.16, 2.94)				

Table 18 shows that the availability and accessibility of the respondents to various resources and infrastructural facilities available in their vicinity, with 55.56 percent of respondents in Kerala and 60 percent of respondents in Manipur having a medium level of availability and accessibility to resources and infrastructure, respectively; followed by 24.44 percent and 17.78 percent of respondents in Kerala and Manipur having a low level of availability and accessibility to resources and infrastructure, respectively. While 20% and 22.22 percent of respondents in Kerala and Manipur, respectively, fell into the low category. The findings revealed that the majority of respondents from the research area have good availability and accessibility of resources and infrastructure for improving their overall livelihood security.

4.4 Correlation between livelihood security and independent variables

Table 19 represents the result obtained from the correlation analysis of livelihood security with the independent variables. Annual income is positively and significantly related at one per cent level of significance while family size and risk orientation are significant at 5 per cent level of significance. It shows negative and significant correlation with education, mass media exposure at 0.001 per cent level of significance. Whereas age, farming experience, extension orientation and scientific orientation shows non-significant correlation with livelihood security. Annual income,

family size, land holding and risk orientation of the respondents were found to be crucial to have better livelihood security.

Table 19. Correlation between livelihood security and independent variables

Independent variables	Correlation coefficient
1. Age	0.01 NS
2. Education	- 0.454***
3. Annual income	0.309**
4. Family size	0.269*
5. Land holding	0.503***
6. Farming experience	0.16 NS
7. Mass media exposure	-0.694***
8. Extension orientation	-0.061NS
9. Scientific orientation	-0.177 NS
10. Risk orientation	0.246*

NS- Non-Significant

*Significant at 5 percent level

**Significant at 1 percent level

***Significant at 0.001 percent level

From the Table 19, it is evident that age was non-significantly correlated with livelihood security.

It has been seen that education was negatively and significantly correlated to livelihood security. This may be due to the fact that the education level is a deciding factor for job selection and as higher the educational level, the people will go for high profile jobs. Since the respondents are farm women for which educational qualification is not at all a criterion, the variable education had a negative correlation with livelihood security of farm women. Also, women with lower level of education level who are left with no other means of earning are found to be more skilled and proficient in handling farm level works.

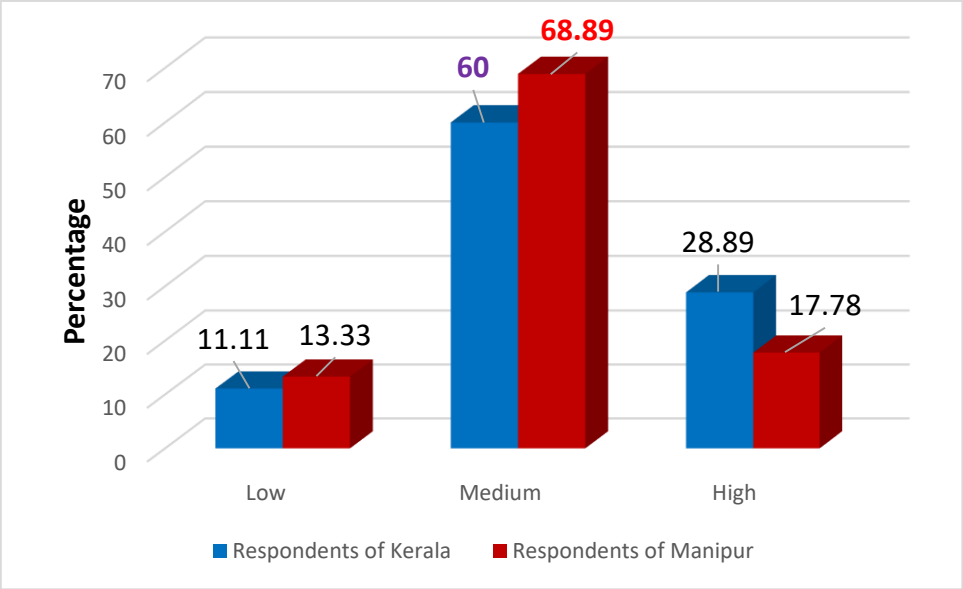

Fig 17. Distribution of farm women based on livelihood security

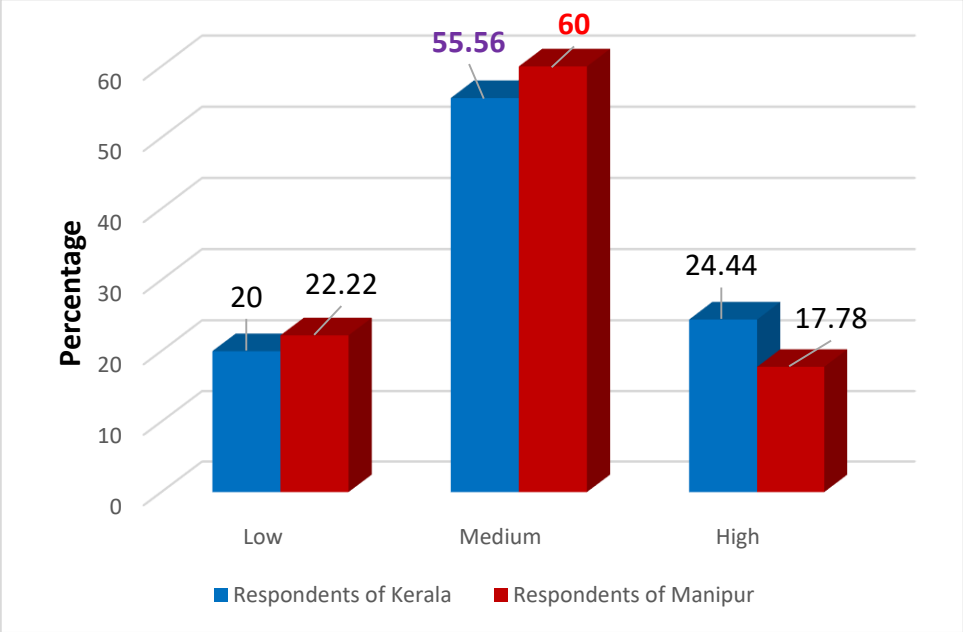

Fig 18. Distribution of farm women based on availability and accessibility of resources and infrastructure

Relationship between annual income and livelihood security was significantly and positively correlated. It might be due to the influence of annual income on the economic stability and viability of the respondent and also the increase in the income level enhances the farming activities and maximize yield for higher return.

It is clear that the size of a family has positive and significant relationship with the stability of one's livelihood. That is, as the size of a family decreases, the value of the livelihood stability it provides rises, and vice versa. As a result, the size of the family should be kept limited to maximise the respondents' livelihood stability.

Land holding showed a positive and significant relationship with livelihood security. It can be inferred that with the increase in land area, farm women tend to grow more crops and also practice diversified farming. Based on land holding farm women decides the adoption of effective scientific technology to ensure maximum yield and higher remuneration.

Farming experience, extension orientation and scientific orientation was found to be non-significant correlation with livelihood security.

Mass media exposure was found to be negatively and significantly correlated to livelihood security. The day of a farm woman starts at early morning, after finishing house hold works, they are going for field works and after that again completing the left over works at home. So, the time for media exposure will be very limited. These reasons along with their low level of educational qualification may be attributed for the low mass media exposure. Therefore, women with high livelihood security will be having less access to mass media.

Risk orientation was positively and significantly correlated to livelihood security. It is evident that the farm women take risk, along with high tolerance for adversity, self-reliance and capacity for hard work which are linked with success in farming, thereby increases livelihood security.

4.5 Contribution of the principal components to the variance in livelihood security

Principal component analysis was performed to analyse the contribution of the principal components to the variance in livelihood security and the results are presented in Table 20. On performing the principal component analysis, it was inferred that

the principal components one and two were considered as the major principal components that contribute towards livelihood security which was evident from the eigen value that is greater than one (Table 20 and 21).

Table 20. Contribution of the principal components to the variance in livelihood security for Kerala

Principal Component	Eigen value	Variability (%)	Cumulative % of variance
PC1	2.974	49.565	49.565
PC2	1.282	21.362	70.926
PC3	0.78	13.007	83.934
PC4	0.517	8.618	92.551
PC5	0.253	4.21	96.761
PC6	0.194	3.239	100

It was observed that principal components one and two on summation presented a cumulative variance of 70.926. The PCA- biplot indicates that PC1 was positively associated with food security, educational security and habitat security, all relations being positive. Whereas occupational security, social security and health security contributed positively to PC2. All the components showed uniformity in distribution, which is an indicator of imparting more or less similar response to livelihood security as shown in fig 19.

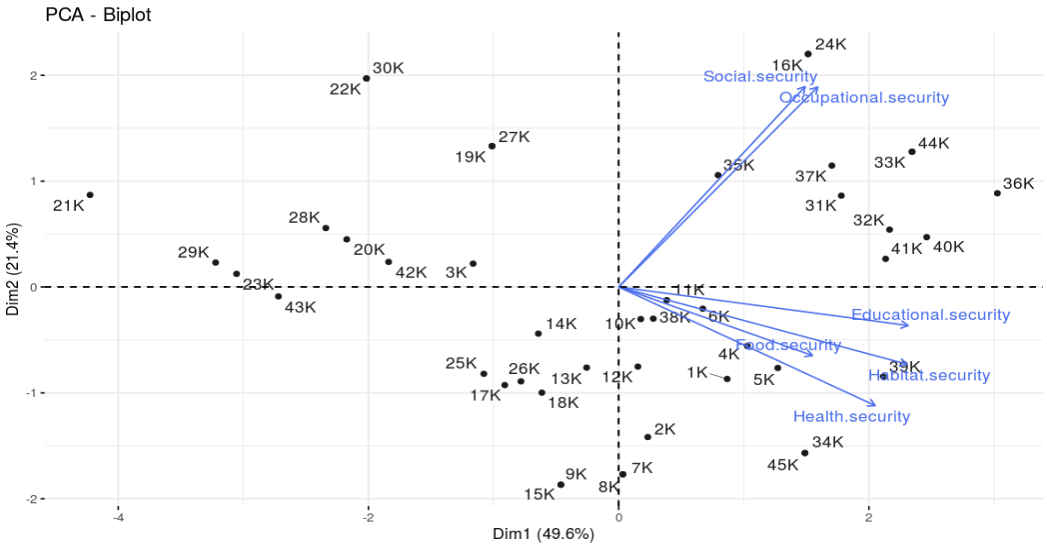

Fig 19. Biplot obtained from Principal Component Analysis of Kerala

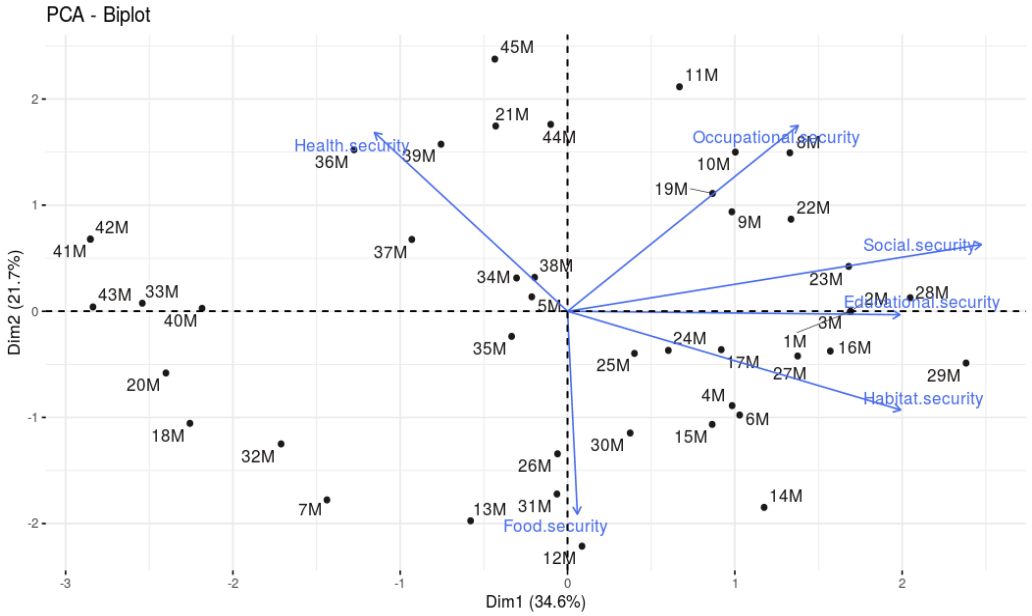

Fig 20. Biplot obtained from Principal Component Analysis of Manipur

Table 21. Contribution of the principal components to the variance in livelihood security for Manipur

Principal Component	Eigen value	Variability (%)	Cumulative %
PC1	2.078	34.63	34.63
PC2	1.302	21.707	56.336
PC3	0.93	15.506	71.842
PC4	0.753	12.548	84.391
PC5	0.607	10.112	94.503
PC6	0.33	5.497	100

It was observed that principal components one and two on summation presented a cumulative variance of 56.336. The PCA- biplot indicates that variables with the strongest relationship with PC1 were educational security, habitat security and social security, all relations being positive. Whereas food security and occupational security contributed positively to PC2. Health security is negatively associated with PC2. It was observed that health security showed negative response and food security showed comparatively lesser response. While it shows uniformity in distribution of all the other components as shown in fig 20.

4.6 Comparison of livelihood security in Kerala and Manipur

The Mann-Whitney U test was done to determine whether there was difference in the components of livelihood security among farm women in Kerala and Manipur.

Table 22. Component wise comparison of livelihood security

	Food security	Occupational security	Educational security	Habitat security	Health security	Social security
Mann Whitney U	452.5	467	621	1001.5	232.5	466.5
Z	-4.596	-4.523	-3.217	-0.100	-6.376	-4.525
Asymp. Sig. (2-tailed)	.000	.000	.001	.921^{NS}	.000	.000

The results depicted in Table 22 indicates that there is significant difference in food, occupational, educational, health and social security. Whereas habitat security is found to have no significant difference. The significant difference in food security of farm women is due to the fact that, in Kerala there is adequate resources and markets to improve agricultural productivity, access to balanced diet and improved nutrition. The respondents of Kerala were actively involved in farming activities which ensured them a regular employment opportunity leading to high occupational security. Kerala has the highest literacy rate of all the states which leads to higher educational security. Also, the health sector of Kerala is very advanced and well maintained with adequate medical facilities compared to other states in India. Women in Manipur have more exposure in social, economic, political and cultural activities compared to that of Kerala. Majority of the respondents in Kerala and Manipur had availability of housing and basic amenities such as toilet facilities, water facilities and electric supply in their houses.

4.7 Constraints faced by farm women and suggestive measures

Table 23. Constraints faced by farm women in Kerala

Constraints	Garett Score	Rank
1. Insufficient funds	64.1	1
2. Unavailability of good quality seeds	61.24	2
3. Inadequate land for cultivation	52.9	3
4. Insufficient training on farming	51.7	4
5. Inadequate marketing facilities	51.2	5
6. Crop loss due to wild animal attack	47.2	6
7. Unavailability of fertilizers	46.5	7
8. Insufficient irrigation facilities	39.9	8
9. Lack of farm machineries	38.08	9

The above result table 23 clearly shows that the major constraints faced by farm women were insufficient funds, unavailability of good quality seeds, inadequate land for cultivation, insufficient training on farming, inadequate marketing facilities, crop loss due to wild animal attack, unavailability of fertilizers, insufficient irrigation facilities and lack of farm machineries.

4.7.1.1 Insufficient funds

It includes unavailability of farming capital, lack of agricultural capital, inadequate agricultural funding base, unfinanceable new farms, limited availability of farm loans and insufficient financial resources. As a suggestive measure to this constraint, it can be suggested to focus on developing and implementing finance strategies to enhance access to suitable financial services to farm women to increase agricultural productivity and income.

4.7.1.2 Unavailability of good quality seeds

Unavailability of good quality seeds and planting material is one of the important constraints for further growth of agriculture sector. The reasons for unavailability of quality seeds could be attributed to a number of factors. One important reason is the high price of HYV seeds. The state Agriculture Department was the important source from which most of the farmers obtained HYV seeds free of cost under different programmes and area enhancement schemes. But these schemes are not a regular occurrence which forces the farmers to procure seeds from other sources. Moreover, seeds that were available to the farmers through these programmes were sometimes of low quality (low germination percentage). Therefore, seed unavailability is a major problem and good quality seeds should be provided to farmers at right time.

4.7.1.3 Inadequate land for cultivation

There is a preponderance of small land holdings in the study area which leads to decline in productivity. As a suggestive measure to this constraint, farm women can practice land leasing and collective farming which will reduce the production risk and working capital required while still generating income and retaining ownership of the land and also expand their operations for greater profitability.

4.7.1.4 Insufficient training on farming

Large and medium farmers reap the majority of the benefits of the agricultural support system, while small and marginal farmers are usually ignored. It is apparent that the delivery methods at the grass-roots level need to be revamped in order to successfully address the difficulties that farmers face. It's not just a matter of allocating more funds and hiring more people; the entire delivery system must alter to focus on the end-user, which is the farmer.

4.7.1.5 Inadequate marketing facilities

Marketing challenge include lower price for products, lack of facilities for latest marketing information, transport facility, etc. Farm women wanted a higher price for their crops as well as better marketing options. It can be thus suggested to strengthen and enhance the knowledge of the marketing of agricultural products using modern

methods. It is also possible to argue that public and private firms and cooperatives play a key role in resolving the issues of marketing agricultural products generated by farm women by investing in production and distribution, as well as price stabilization activities.

4.7.1.6 Crop loss due to wild animal attack

One of the biggest obstacles experienced by the farm women in the research area is crop raids and attacks by wild animals. As a suggestive measure, the most effective measure was the setting up of a crash guard rope fencing and electric fence as it could prevent the entry of wild animals to the nearby property of farmers to a certain extent.

4.7.1.7 Unavailability of fertilizers

The problem of non-availability of fertilisers on time, excessive fertiliser costs and lack of understanding about necessary fertiliser doses were all mentioned by majority of the respondents. More government shops or centres might be built to provide a sufficient and timely supply of these inputs at a reasonable price.

4.7.1.8 Insufficient irrigation facilities

The most significant aspect in crop cultivation is irrigation. To solve the acute water shortage especially during the summer seasons, make use of rain water harvesting systems and rain water percolation pits. This is one of the simplest and cost-effective water preservation systems.

4.7.1.9 Lack of farm machineries

High initial costs, high fuel costs, a lack of financial facilities, and high maintenance costs are the most significant barriers to adoption of farm mechanisation. Most of the farm women are unable to afford expensive machinery such as tractors. The majority of farm women suggested that the government support the farming community by giving subsidies for equipment as a recommended approach. Priority should be given to expensive equipment that necessitates a significant investment. Depending on the importance of the activity and its dissemination among farmers, the subsidy proportion may be increased for different implements.

Table 24. Constraints faced by farm women in Manipur

Constraints	Garett Score	Rank
1. Inadequate government support	65.49	1
2. Insufficient marketing facilities	54.13	2
3. Insufficient irrigation facilities	53.8	3
4. Insufficient funds	51.07	4
5. Inadequate transportation facilities	49.33	5
6. Inadequate extension services	47.9	6
7. Unavailability of inputs in time	47.4	7
8. Inadequate storage facilities	41.27	8
9. Improved method of cultivation and crop management are inadequate	40.9	9

The results table above clearly illustrates that the constraints faced by farm women which are as follows: inadequate government support, inadequate marketing facilities, insufficient irrigation facilities, insufficient funds, inadequate transportation facilities, inadequate extension services, unavailability of inputs in time, inadequate storage facilities and improved method of cultivation and crop management are inadequate.

4.7.2.1 Inadequate government support

It includes lack of sufficient number of vehicles for transport, medical facilities, financial institutions and communication facilities. From the table, it is clear that public facility was ranked first position by the respondents. The availability of basic public services must reach the poor and the backward sections of the society in the

remotest areas which certifies its implementation by the government in improving the living conditions of the people.

4.7.2.2 Inadequate marketing facilities

It includes lower price for products which is not reasonable, lack of facilities for latest marketing information, storage, packaging and transport facility. Farm women wanted a higher price for their crops as well as better marketing options. Local market units are desperately needed in their area so that they can sell their produce directly to these markets. It can be thus suggested to strengthen and enhance the knowledge of the marketing of agricultural products using modern methods. It is also possible to argue that public and private firms and cooperatives play a vital role in overcoming the issues of marketing agricultural products to farm women by investing in production and distribution as well as price stabilization activities.

4.7.2.3 Insufficient water facilities

Lack of access to drinking water services because water sources are frequently located far from their dwellings, making it necessary for women to spend a significant amount of time and energy carrying water. For farming, the farm women depend on rain to irrigate their crops, in times when there is no rain, it leads to crop failure. Improving water infrastructure must be a priority. Rainwater harvesting and recycling wastewater will also reduce water scarcity. The government has been promoting the adoption of rainwater harvesting as a mass movement

4.7.2.4 Insufficient funds

It includes lack of agricultural capital, unavailability of farming capital, limited availability of farm loans, inadequate agricultural funding base, unfinanceable new farms and insufficient financial resources. Farm women have little access to capital or credit facilities. As a suggestive measure to this constraint, improve agricultural capital, raising investment in farms and provide land funds. It can be suggested to focus on developing and implementing finance strategies to enhance access to suitable financial services to farm women to increase agricultural productivity and income.

4.7.2.5 Inadequate transportation facilities

The main constraints in agricultural produce transportation are lack of logistic connectivity, support, and facilities to ensure farmers' timely delivery of their harvest to the market, as well as a lack of services such as cold storage for fresh perishable produce that requires immediate transportation. Therefore, rural areas have special transportation needs. Public transit services can help reduce many problems faced in rural areas. Rural transportation can help rural residents get access to services, goods, and facilities by increasing their mobility.

4.7.2.6 Inadequate extension services

The vast majority of farmers have no access to advanced agricultural technology information. As a result, there is a significant adoption gap among farmers who want to boost productivity through maximizing resource utilization. Because agricultural production is totally in the hands of farmers, the extension service plays a critical role in informing, inspiring, and educating them about the technological, managerial, and market opportunities accessible to them, allowing them to increase farm productivity and profitability. Extension service providers, such as central and state government agencies, agribusiness firms, input dealers, NGOs, and others, should provide a variety of valuable services to farmers, such as information and service assistance.

4.7.2.7 Unavailability of inputs in time

One of the biggest challenges faced by agricultural women is the lack of timely access to inputs such as fertilizers, insecticides, and pesticides. They were concerned about fertilizer availability at the right moment. Through the State Department of Agriculture and other specialized institutions, the federal and state governments have played a key role in supplying inputs and support services to farmers. However, the performance of these institutions has deteriorated over time due to a variety of factors such as insufficient staff, a shortage of funding, and a lack of desire among service providers. In addition, large and medium farmers reap the majority of the benefits of the agricultural support system, while small and marginal farmers are usually ignored. More government shops or centres should be built, it is suggested, to provide enough and timely supply of these inputs at a reasonable cost.

4.7.2.8 Inadequate storage facilities

Lack of storage facilities leads to large amount of food loss. The lack of access to storage facility is one of the most important causes of post-harvest losses. To deal with the problem of perishable product, infrastructure for post-harvest management, such as cold storage facilities, should be improved.

4.7.2.9 Improved method of cultivation and crop management are inadequate

Many diseases, weeds, and insect pests have hampered agricultural output, resulting in crop yield losses. There is a lot of fear about adopting better agricultural methods and new technologies, which makes it even more important to look for other ways to boost crop productivity. Farm women must take a long-term view when making decisions about which technology to use and what commodities to produce in order to generate lucrative profit.

4.8 Formulation of a sustainable livelihood security framework

Livelihood strategies were formulated at farm women and delivery system level to safeguard livelihood outcomes such as adequate availability of raw materials, efficient transportation facilities, ample marketing facilities, sufficient funds leading to more production and higher income.

Strategies for Sustainable Livelihood Security at farm women level:

1. Farm women should seek awareness on marketing.

2. Make use of available resources.

3. Seek funds to support farming.

4. Seek training on new and effective agricultural practices.

Strategies for Sustainable Livelihood Security at delivery system level:

1. They should mobilize essential agricultural services.

2. Promote rain water harvesting.

3. Establish efficient transporting and marketing facilities.

4. ensure availability of raw materials required for crop production.

5. Provide financial support to farm women.

Expected Outcome after adopting the Livelihood strategies:

1. There will be adequate availability of raw materials.

2. Efficient transportation facilities

3. Adequate marketing facilities.

4. Sufficient funds.

5. More production.

6. More income.

4.9. Empirical model of the study

An empirical model was created based on the study's findings as given in Plate: 2. It is evident that annual income, family size, land holding and risk orientation have positive as well as significant association with livelihood security. Whereas education and mass media exposure was negatively and significantly associated with livelihood security. Conversely other variables like age, farming experience, extension orientation and scientific orientation are not significantly related to livelihood security.

4.10. Future lines of research

1. The study was carried out on a small scale, confined to a specific area that was purposefully chosen. It is important to replicate this study in several places in order to generalise the findings to a broader extent.
2. To improve the personal, socio-psychological and cultural characters of the farm women in achieving livelihood security, future studies can be conducted to develop strategies.

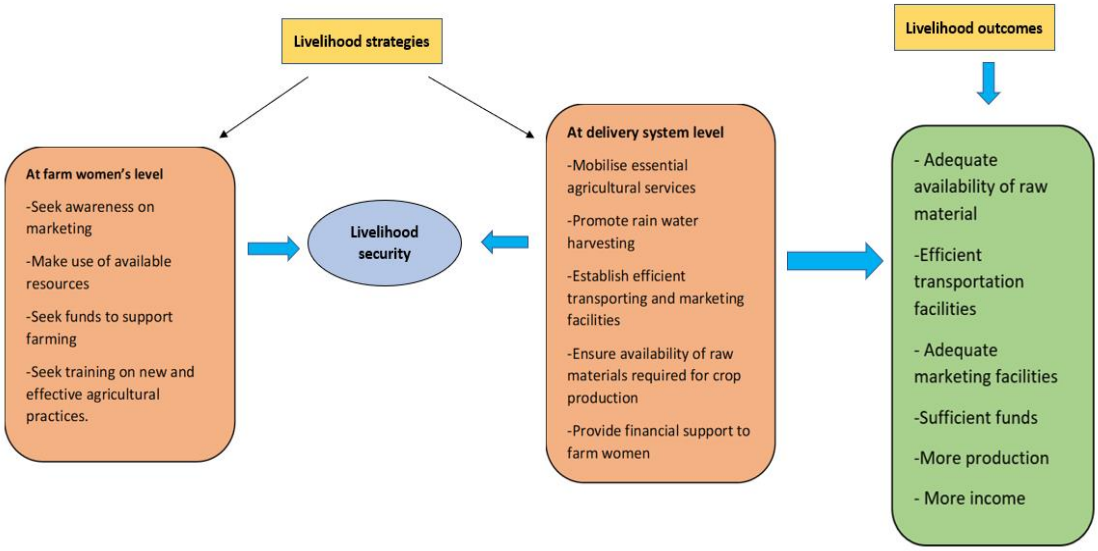

Plate 4. Livelihood security framework

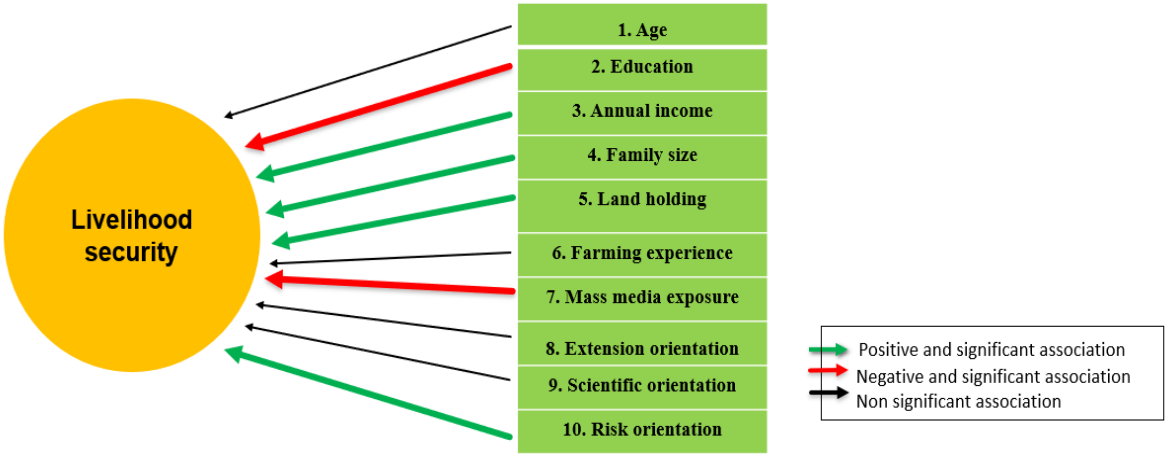

Plate 5. Empirical model of the study

4.11. Recommendations of the study

1. Most of the farm women in Kerala were having small size of land-holding. The government can promote the concept of 'Group Farming,' which can assist them in gaining access to a variety of farming services such as easier access to loans, marketing of produce, distribution of farm work among themselves, and so on, ultimately supporting them in improving their economic status and better livelihood security.
2. The farm women of Kerala were found to have lesser social participation compared to that of Manipur. To improve the status of social participation and livelihood security of farm women, it is needed to promote active participation in various social, economic and cultural activities.
3. Even though many funding schemes and projects encouraging livelihood security, especially for women in North-East India are available, majority are being left out from such gains due to limited knowledge about such funding programmes. Therefore, it is vital to create awareness to utilize by adopting/participating various projects with supporting funds efficiently.
4. Lack of connectivity and marketing facilities were the major challenges associated with development in Manipur. This is a serious concern which needs to be addressed through concerted efforts and policy support for infrastructure development.
5. Inadequate training programmes have been pinpointed by many the respondents from both the study areas. For this, the concerned institutions should come forward to impart training and revise their training courses as per the need of the farm women from time to time.

CASE STUDY OF A SUCCESSFUL FARM WOMAN

A case study of a successful farm woman is presented to support the results of the study. For this, an exclusively successful farm woman with high livelihood security was chosen based on her agricultural success, and this successful case describes the status and potential for farm women in detail.

Smt. Phamila R, aged 65, from Phungcham panchayat, Ukhrul North block, studied up to matriculation. The family consist of six members, her husband, two daughters and two sons. They have 2.5 acres of land with a stream. She grew fruit crops such as Kachai lemon, guava, banana, aonla, plum and peach. Kachai lemon is an exotic horticulture fruit from Manipur that has been registered as a Geographical Indication (GI). It is considered special since it is a rich source of ascorbic acid and is in high demand both locally and globally.

She grew a variety of vegetable crops, including potato, brinjal, Naga king chilli, tomato, turnip, pumpkin, cabbage, ginger, cucumber, and others. Farmers can benefit greatly from Naga King Chilli (U morok), which has received GI certification. If it is planted on a commercially viable scale, it can provide lucrative returns to farmers, significantly improving their living. She uses crop rotation and an integrated farming-based system with fruit crops, oil seeds, cereals, fisheries, poultry, duckeries, and animal husbandry to increase profits by maximising resource utilisation. She also raises indigenous birds in her backyard, increasing the flock and sells chicks, chicken, and eggs to others. She also raises cattle and uses the by-products of the animal enterprise as crop inputs, as well as making vermicompost from cow dung and crop leftovers, which she uses as manure in her own field.

Furthermore, because Manipur has a high rate of fish consumption, fish are constantly sold in the market to meet demand. It has a significant impact on her socioeconomic situation. She purchased hybrid vegetable seeds from KVK and agricultural shops. She used indigenous kinds that she had stockpiled from past harvests, as well as hybrid varieties that could yield more. She was a regular attendee of District Agriculture Office (DAO) and KVK training sessions.

She invested Rs. 50,000 each year on crop management and obtained total returns of Rs. 2,00,000. She spent Rs. 2,50,000 per year on livestock husbandry and obtained a total return of Rs. 10,50,000. Crop diversity, minimal external input, and family labour are the primary variables contributing to strong livelihood security, with a net return of Rs. 9,50,000.

Plate 6. Interviewing respondent

Plate 7. Paddy field of the respondent

Plate 8. Vegetable farm

Plate 9. Livestock

Summary

SUMMARY

Women play a key role in Indian economy. Historically, in Indian economy, agriculture has been the mainstay and traditionally, the most vital sector of female employment, particularly in the rural areas. Over the years, there is a gradual understanding of the significant roles and contribution of women in agricultural development, food security, nutrition, horticulture, processing, fisheries, sericulture and other allied fields. Women play a very important role in agriculture as agricultural labourers, farmers, co-farmers, as farm entrepreneurs or, as farm managers. In India, most of the farm women belong to illiterate, poor and assetless farm family from backward communities who actively participate in farm operations. Their contribution to agriculture and allied activities are not recognised and appreciated and is invisible conceptually and culturally. Even though they highly participate in agricultural operations, they are considered as "invisible work force". So, comprehensive understanding of their participation becomes obligatory. Their involvement is extensive, but till now it remained uncounted and undervalued. Further, comparative analysis of farm women from different regions has not been made so far. Hence, keeping this in view, the study was undertaken.

The present study is an attempt to understand the livelihood security of farm women in Kerala and Manipur. Women in Kerala have historically enjoyed remarkably better level of literacy, healthcare, maternal health, etc. However, their position in society or public participation has not improved proportionately. Kerala has been witnessing a dichotomy of fallowing of farm land on one hand and increasing dependence for food products on the other. The crisis that the farming sector has been facing in Kerala, constantly affect the entire population particularly, women. Agriculture being the major occupation of the people of Manipur, has a significant place in the economy of the state. In Manipur, women play an important role in agricultural and allied sectors including crop production, livestock, horticulture, post-harvest operations, agro-forestry, fisheries, etc. Due to its diversities and topography, altitude, fertility and climatic condition, it offers a greater scope for cultivation of various major as well as minor crops. Agricultural activities which are generally carried out by men

are now being undertaken by women as men charges higher wages than women. Women have been putting in labour not only physical but also in terms of quality and efficiency. Hence it will be highly useful to analyse the differences with regard to livelihood securities of farm women of Kerala and Manipur. The present study was structured with the following objectives.

1.Assess and compare the sustainable livelihood security of farm women in Kerala and Manipur.

2.Analyse the relationship between personal, socio-psychological and cultural characteristics of the respondents with livelihood security.

3.Delineate the constraints experienced by the farm women and formulate a sustainable livelihood security framework.

The study was conducted in Thiruvananthapuram district of Kerala and Ukhrul district of Manipur. From each district, block having maximum number of farm women viz Vamanapuram from Kerala and Ukhrul North from Manipur were selected and from each block three panchayats with maximum number of farm women viz Vamanpuram, Pangode and Kallara from Kerala and Phungcham, Chingjaroi Khullen and Nungbi Khullen from Manipur were selected for the study. From each panchayat, 15 farm women were selected randomly. A total of 45 farm women were being surveyed from each district thereby comprising a total number of 90 respondents for the study.

Livelihood security is the dependent variable and the scale developed by Baby (2005) was used to measure it. The six components of livelihood security selected through judges rating were food security, occupational security. educational security, habitat security, health security and social security. The ten independent variables of the study selected through judges rating included: age, education, annual income, family size, land holding, farming experience, mass media exposure, extension orientation, scientific orientation and risk orientation. The data collection was done using interview schedule. Frequency, percentage analysis, mean, standard deviation, correlation analysis, principal component analysis, Mann Whitney U test and Garrett ranking were the statistical tools used for analysing and interpreting the data. The major findings of the study are given below:

- More than half of the respondents (57.78% and 62%) in Kerala and Manipur belonged to middle age group followed by old age (26.67 % and 24 %) and young age category (15.55 % and 13 %).
- 64.45 per cent of the respondents in Kerala had education up to high school followed by graduate and above, college and middle school. Whereas 36 per cent of the respondents in Manipur had education up to high school followed by middle school, primary school, college and graduate and above.
- 48.89 per cent and 53.33 per cent of the respondents in Kerala and Manipur had low level of income followed by low (48.89 % and 53.33 %) and high category (6.67 % and 17.78 %).
- More than half of the respondents (55.56%) in Kerala had small family size followed by medium (35.56 %) and large family size (8.88 %). Whereas 58 per cent of the respondents in Manipur had medium family size followed by small (36 %) and large family size (7 %).
- With regard to land holding most of the farm women (64.44 per cent) in Kerala were having small land holding followed by large (26.67%) and medium (8.89 %). Whereas 62 per cent of the respondents in Manipur were having large land holding followed by medium (27 %) and small (11 %).
- 75.56 per cent of the respondents in Kerala were found under high farming experience category followed by low (20%) and medium category (4.44%). 84 per cent of the respondents in Manipur were found under high farming experience category followed by medium (11%) and low category (4%).
- Majority of the respondents (62.22 % and 66.67 %) in Kerala and Manipur were found under medium mass media exposure category followed by low (13.33 % and 33.33 %) and high (20 % and 4.45 %).
- 75.56 per cent and 53.33 per cent of the respondents in Kerala and Manipur had medium extension orientation. In Kerala, 11 percent and 0 percent had high and low level of extension orientation. Whereas 28.89 per cent and 17.78 per cent of the respondents in Manipur were under low and high category.
- 64.44 per cent and 71.11 percent of the respondents in Kerala and Manipur had medium level of scientific orientation followed by low (20% and 22.22%) and high category (15.56% and 6.67%).

- Majority of the respondents (75.56% and 68.89 %) in Kerala and Manipur had medium level of risk orientation. 20 percent and 4.44 percent had high and low risk orientation in Kerala. Whereas 31.11 percent and 0 percent had low and high level of risk orientation in Manipur.
- Majority of the respondents (60% and 68.89%) in Kerala and Manipur had a medium level of livelihood security followed by high (28.89 % and 17.78 %) and low category (11.11 % and 13.33 %).
- Majority of the respondents (55.56% and 60%) in Kerala and Manipur had medium availability and accessibility of resources and infrastructure. In Kerala, 24.44 percent and 20 percent were found under high and low category whereas in Manipur 22.22 percent and 17.78 per cent were found under low and high category.
- There was significant difference in food, occupational, educational, health and social security. Whereas habitat security is found to have no significant difference.
- Correlation analysis revealed that the major variables influencing livelihood security were annual income, family size, land holding and risk orientation.
- Insufficient funds and inadequate government support were the major constraints faced by farm women in Kerala and Manipur in achieving livelihood security.

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Abstract

LIVELIHOOD SECURITY OF FARM WOMEN IN KERALA AND MANIPUR: A COMPARATIVE ANALYSIS

by

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ABSTRACT

The study entitled “Livelihood security of farm women in Kerala and Manipur: A comparative analysis” was conducted to assess and compare the livelihood security of farm women in Kerala and Manipur and analyze the relationship between personal, socio-psychological and cultural characteristics of the respondents and its relationship with livelihood security and delineate the constraints experienced by the farm women and formulate a sustainable livelihood security framework.

The study was conducted in Thiruvananthapuram district of Kerala and Ukhrul district of Manipur. From each district, block having maximum number of farm women viz Vamanapuram from Kerala and Ukhrul North from Manipur were selected and from each block three panchayats with maximum number of farm women viz Vamanpuram, Pangode and Kallara from Kerala and Phungcham, Chingjaroi Khullen and Nungbi Khullen from Manipur were selected for the study. From each panchayat, 15 farm women were selected randomly. A total of 45 farm women were being surveyed from each district thereby comprising a total number of 90 respondents for the study.

Livelihood security is the dependent variable and the scale developed by Baby (2005) was used to measure it. The six components of livelihood security selected through judges rating were food security, occupational security. educational security, habitat security, health security and social security. The ten independent variables of the study selected through judges rating included: age, education, annual income, family size, land holding, farming experience, mass media exposure, extension orientation, scientific orientation and risk orientation.

From the results it could be seen that more than half of the respondents (57.78% and 62%) in Kerala and Manipur belonged to middle age group. 64.45 per cent and 36 percent of the respondents in Kerala and Manipur had education up to high school and 48.89 percent and 53.33 percent of the respondents in Kerala and Manipur had low level of income. More than half of the respondents (55.56%) in Kerala had small family size and 58 percent of the respondents in Manipur had medium family size. With regard to land holding most of the farm women (64.44 %) in Kerala were having small land

holding and 62 percent of the respondents in Manipur were having large land holding. 75.56 percent and 84 percent of the respondents in Kerala and Manipur respectively were found under high farming experience category. Majority of the respondents (62.22 % and 66.67 %) in Kerala and Manipur were found under medium mass media exposure category. 75.56 percent and 53.33 per cent of the respondents in Kerala and Manipur had medium extension orientation and 64.44 percent and 71.11 percent of the respondents in Kerala and Manipur had medium level of scientific orientation. Majority of the respondents (75.56% and 68.89 %) in Kerala and Manipur had medium level of risk orientation.

The study revealed that the majority of the respondents (51.11% and 64.44%) in Kerala and Manipur had a medium level of livelihood security. Majority of the respondents (77.78% and 68.89%) in Kerala and Manipur had medium availability and accessibility of resources and infrastructure.

The biplot obtained from PCA of Kerala revealed that the components with the strongest relationship with PC1 were food, educational and habitat security, all relations being positive whereas occupational, social and health security contributed positively to PC2. The results of principal component analysis of Manipur– biplot, it was observed that PC1 is positively associated with educational, habitat and social security. Whereas PC2 is positively associated with food and occupational security. PC2 is negatively associated with health security.

From the Mann-Whitney U test, it has been revealed that there was significant difference in food, occupational, educational, health and social security. Whereas habitat security is found to have no significant difference. From the correlation study it was revealed that the variables influencing livelihood security were education, annual income, family size, land holding, mass media exposure and risk orientation. The study also revealed that there was no significant association between livelihood security and the variables such as age, farming experience, extension orientation and scientific orientation.

The major constraints faced by farm women in Kerala were insufficient funds, unavailability of good quality seeds, inadequate land for cultivation, insufficient

training on farming, inadequate marketing facilities, crop loss due to wild animal attack, unavailability of fertilizers, insufficient irrigation facilities and lack of farm machineries. And the major constraints perceived by the farm women in Manipur were inadequate government support, insufficient marketing facilities, insufficient irrigation facilities, insufficient funds, inadequate transportation facilities, inadequate extension services, unavailability of inputs in time, inadequate storage facilities and improved method of cultivation and crop management are inadequate. The constraints experienced by the farm women need to be considered in order to improve the livelihood security of farm women.

The major suggestions by the respondents of Kerala for enhancing their livelihood security were to improve funding for development of farm women, aadequate and timely supply of quality seeds, promote collective farming, ensure better delivery system of agriculture support services, create awareness on marketing, support to provide fencing to protect from wild animals, adequate and timely supply of inputs, promote rain water harvesting and measures for sufficient supply of farm machineries. And the major suggestions given by the respondents of Manipur for improving their livelihood security were to provide basic public services by the government, create awareness on marketing, promote rainwater harvesting, improve funding for development of farm women, improve public transportation services, improve existing extension services, adequate and timely supply of inputs, provide cold storage facilities and improved method of cultivation should be made available to farm women.

Livelihood strategies were formulated at farm women and delivery system level to safeguard livelihood outcomes such as adequate availability of raw materials, efficient transportation facilities, ample marketing facilities, sufficient funds leading to more production and higher income.

സംഗ്രഹം

കേരളത്തിലെയും മണിപ്പൂരിലെയും കർഷക സ്ത്രീകളുടെ ഉപജീവന സുരക്ഷയെ വിലയിരുത്തുന്നതിനും താരതമ്യപ്പെടുത്തുന്നതിനും അവരുടെ വ്യക്തിപരവും സാമൂഹിക-മാനസികവും സാംസ്കാരികവുമായ സവിശേഷതകൾ തമ്മിലുള്ള ബന്ധം വിശകലനം ചെയ്യുന്നതിനുമായി "കേരളത്തിലെയും മണിപ്പൂരിലെയും കർഷക സ്ത്രീകളുടെ ഉപജീവന സുരക്ഷ: ഒരു താരതമ്യ വിശകലനം" എന്ന തലക്കെട്ടിൽ പഠനം നടത്തി. ഒപ്പം ഉപജീവന സുരക്ഷയുമായുള്ള അതിന്റെ ബന്ധവും കർഷക സ്ത്രീകൾ അനുഭവിക്കുന്ന പരിമിതികൾ നിർവചിക്കുകയും സുസ്ഥിരമായ ഉപജീവന സുരക്ഷാ ചട്ടക്കൂട് രൂപപ്പെടുത്തുകയും ചെയ്യുന്നു.

കേരളത്തിലെ തിരുവനന്തപുരം ജില്ലയിലും മണിപ്പൂരിലെ ഉഖ്രുൽ ജില്ലയിലുമാണ് പഠനം നടത്തിയത്. ഓരോ ജില്ലയിൽ നിന്നും, കേരളത്തിൽ നിന്ന് വാമനപുരം, മണിപ്പൂരിൽ നിന്ന് ഉഖ്രുൽ നോർത്ത് എന്നിങ്ങനെ ഏറ്റവും കൂടുതൽ കർഷക സ്ത്രീകളുള്ള ബ്ലോക്കുകൾ തിരഞ്ഞെടുത്തു, ഓരോ ബ്ലോക്കിൽ നിന്നും ഏറ്റവും കൂടുതൽ കർഷക സ്ത്രീകളുള്ള മൂന്ന് പഞ്ചായത്തുകൾ, കേരളത്തിൽ നിന്ന് വാമനപുരം, പാങ്ങോട്, കല്ലറ എന്നിവയും മണിപ്പൂരിൽ നിന്ന് ഫുങ്ചാം, ചിൻജാരോയ് ഖുള്ളൻ, നുങ്ബി ഖുല്ലെൻ എന്നിവയും ആണ് പഠനത്തിനായി തിരഞ്ഞെടുത്തത്. ഓരോ പഞ്ചായത്തിൽ നിന്നും 15 കർഷക വനിതകളെ ക്രമരഹിതമായി തിരഞ്ഞെടുത്തു. ഓരോ ജില്ലയിൽ നിന്നും മൊത്തം 45 കർഷക സ്ത്രീകളെ സർവ്വേ ചെയ്യുന്നു, അങ്ങനെ മൊത്തം 90 പേർ പഠനത്തിനായി പ്രതികരിച്ചു.

ഉപജീവന സുരക്ഷ എന്നത് ആശ്രിത വേരിയബിളാണ്, ഇത് അളക്കാൻ ബേബി (2005) വികസിപ്പിച്ച സ്കെയിൽ ഉപയോഗിച്ചു. ജഡ്ജസിന്റെ റേറ്റിംഗിലൂടെ തിരഞ്ഞെടുത്ത ഉപജീവന സുരക്ഷയുടെ ആറ് ഘടകങ്ങൾ ഭക്ഷ്യസുരക്ഷ, തൊഴിൽ സുരക്ഷ എന്നിവയായിരുന്നു. വിദ്യാഭ്യാസ സുരക്ഷ, ആവാസ വ്യവസ്ഥ, ആരോഗ്യ സുരക്ഷ, സാമൂഹിക സുരക്ഷ. ജഡ്ജസിന്റെ റേറ്റിംഗിലൂടെ തിരഞ്ഞെടുത്ത പഠനത്തിന്റെ പത്ത് സ്വതന്ത്ര വേരിയബിളുകൾ ഉൾപ്പെടുന്നു: പ്രായം, വിദ്യാഭ്യാസം, വാർഷിക വരുമാനം, കുടുംബത്തിന്റെ വലിപ്പം, ഭൂമി കൈവശം വയ്ക്കൽ, കൃഷി അനുഭവം, ബഹുജന മാധ്യമങ്ങളുടെ എക്സ്പോഷർ, എക്സ്റ്റൻഷൻ ഓറിയന്റേഷൻ, ശാസ്ത്രീയ ഓറിയന്റേഷൻ, റിസ്ക് ഓറിയന്റേഷൻ.

കേരളത്തിലും മണിപ്പൂരിലുമായി പ്രതികരിച്ചവരിൽ പകുതിയിലധികം പേരും (57.78%, 62%) മധ്യവയസ്കരാണെന്ന്

ഫലങ്ങളിൽ നിന്ന് മനസ്സിലാക്കാം. കേരളത്തിലും മണിപ്പൂരിലും 64.45 ശതമാനവും 36 ശതമാനവും ഹൈസ്കൂൾ വരെ വിദ്യാഭ്യാസമുള്ളവരായിരുന്നു, കൂടാതെ കേരളത്തിലും മണിപ്പൂരിലും പങ്കെടുത്തവരിൽ 48.89 ശതമാനവും 53.33 ശതമാനവും താഴ്ന്ന നിലവാരത്തിലുള്ളവരായിരുന്നു. കേരളത്തിൽ പ്രതികരിച്ചവരിൽ പകുതിയിലധികം പേർക്കും (55.56%) ചെറിയ കുടുംബവും മണിപ്പൂരിൽ പ്രതികരിച്ചവരിൽ 58 ശതമാനവും ഇടത്തരം കുടുംബക്കാരുമാണ്. കേരളത്തിലെ ഭൂരിഭാഗം കർഷക സ്ത്രീകൾക്കും (64.44%) ചെറിയ ഭൂമിയുള്ളവരും മണിപ്പൂരിലെ 62 ശതമാനം പേർക്കും വൻതോതിൽ ഭൂമിയുള്ളവരുമാണ്. കേരളത്തിലെയും മണിപ്പൂരിലെയും യഥാക്രമം 75.56 ശതമാനവും 84 ശതമാനവും ഉയർന്ന കൃഷി പരിചയ വിഭാഗത്തിലാണ് കണ്ടെത്തിയത്. കേരളത്തിലും മണിപ്പൂരിലുമായി പ്രതികരിച്ചവരിൽ ഭൂരിഭാഗവും (62.22 %, 66.67 %) മീഡിയം മാസ് മീഡിയ എക്സ്പോഷർ വിഭാഗത്തിൽ കണ്ടെത്തി. കേരളത്തിലും മണിപ്പൂരിലും പ്രതികരിച്ചവരിൽ 75.56 ശതമാനവും 53.33 ശതമാനവും മീഡിയം എക്സ്റ്റൻഷൻ ഓറിയന്റേഷനും കേരളത്തിലും മണിപ്പൂരിലും പ്രതികരിച്ചവരിൽ 64.44 ശതമാനവും 71.11 ശതമാനവും ഇടത്തരം ശാസ്ത്രീയ ആഭിമുഖ്യമുള്ളവരായിരുന്നു. കേരളത്തിലും മണിപ്പൂരിലും പ്രതികരിച്ചവരിൽ ഭൂരിഭാഗവും (75.56%, 68.89 %) ഇടത്തരം അപകടസാധ്യതയുള്ളവരാണ്.

കേരളത്തിലും മണിപ്പൂരിലുമായി പ്രതികരിച്ചവരിൽ ഭൂരിഭാഗവും (51.11%, 64.44%) ഉപജീവന സുരക്ഷയുടെ കാര്യത്തിൽ ഇടത്തരം നിലയിലുള്ളവരാണെന്ന് പഠനം വെളിപ്പെടുത്തി. കേരളത്തിലും മണിപ്പൂരിലുമായി പ്രതികരിച്ചവരിൽ ഭൂരിഭാഗവും (77.78%, 68.89%) വിഭവങ്ങളുടെയും അടിസ്ഥാന സൗകര്യങ്ങളുടെയും ഇടത്തരം ലഭ്യതയും പ്രവേശനക്ഷമതയും ഉള്ളവരാണ്.

കേരളത്തിലെ പിസിഎയിൽ നിന്ന് ലഭിച്ച ബെപ്ലോട്ട്, പിസി 1 മായി ഏറ്റവും ശക്തമായ ബന്ധമുള്ള ഘടകങ്ങൾ ഭക്ഷണം, വിദ്യാഭ്യാസം, ആവാസവ്യവസ്ഥ എന്നിവയുടെ സുരക്ഷയാണെന്നും എല്ലാ ബന്ധങ്ങളും പോസിറ്റീവ് ആണെന്നും തൊഴിൽ, സാമൂഹിക, ആരോഗ്യ സുരക്ഷ എന്നിവ പിസി 2 ന് നല്ല സംഭാവന നൽകിയിട്ടുണ്ടെന്നും വെളിപ്പെടുത്തി. മണിപ്പൂർ-ബെപ്ലോട്ടിന്റെ പ്രധാന ഘടക വിശകലനത്തിന്റെ ഫലങ്ങൾ, പിസി 1 വിദ്യാഭ്യാസ, ആവാസ വ്യവസ്ഥ, സാമൂഹിക സുരക്ഷ എന്നിവയുമായി നല്ല ബന്ധമുള്ളതായി നിരീക്ഷിക്കപ്പെട്ടു. അതേസമയം പിസി 2 ഭക്ഷണവും തൊഴിൽ സുരക്ഷയുമായി നല്ല ബന്ധമുള്ളതാണ്. പിസി 2 ആരോഗ്യ സുരക്ഷയുമായി പ്രതികൂലമായി ബന്ധപ്പെട്ടിരിക്കുന്നു.

മാൻ-വൈറ്റ്നേ യു-ടെസ്റ്റിൽ നിന്ന്, ഭക്ഷണം, തൊഴിൽ, വിദ്യാഭ്യാസം, ആരോഗ്യം, സാമൂഹിക സുരക്ഷ എന്നിവയിൽ

കാര്യമായ വ്യത്യാസമുണ്ടെന്ന് വെളിപ്പെടുത്തിയിട്ടുണ്ട്. അതേസമയം ആവാസവ്യവസ്ഥയുടെ സുരക്ഷയ്ക്ക് കാര്യമായ വ്യത്യാസമൊന്നുമില്ല. വിദ്യാഭ്യാസം, വാർഷിക വരുമാനം, കുടുംബത്തിന്റെ വലിപ്പം, ഭൂമി കൈവശം വയ്ക്കൽ, ബഹുജന മാധ്യമങ്ങൾ തുറന്നുകാട്ടൽ, അപകടസാധ്യതയുള്ള ഓറിയന്റേഷൻ എന്നിവയാണ് ഉപജീവന സുരക്ഷയെ സ്വാധീനിക്കുന്ന വേരിയബിളുകൾ എന്ന് പരസ്പര ബന്ധ പഠനത്തിൽ നിന്ന് വെളിപ്പെട്ടു. ഉപജീവന സുരക്ഷയും പ്രായം, കൃഷി പരിചയം, വിപുലീകരണ ഓറിയന്റേഷൻ, ശാസ്ത്രീയ ദിശാബോധം തുടങ്ങിയ വേരിയബിളുകളും തമ്മിൽ കാര്യമായ ബന്ധമില്ലെന്നും പഠനം വെളിപ്പെടുത്തി.

കേരളത്തിലെ കർഷക സ്ത്രീകൾ നേരിടുന്ന പ്രധാന പരിമിതികൾ അപര്യാപ്തമായ ഫണ്ടുകളുടെ അഭാവം, നല്ല വിത്തുകളുടെ ലഭ്യതക്കുറവ്, കൃഷിക്കാവശ്യമായ ഭൂമിയുടെ അഭാവം, കൃഷിയെക്കുറിച്ചുള്ള അപര്യാപ്തമായ പരിശീലനം, അപര്യാപ്തമായ വിപണന സൗകര്യങ്ങൾ, വന്യമൃഗങ്ങളുടെ ആക്രമണം മൂലമുള്ള വിളനാശം, രാസവളങ്ങളുടെ ലഭ്യതക്കുറവ്, ജലസേചന സൗകര്യങ്ങളുടെ അഭാവം. കാർഷിക യന്ത്രങ്ങളുടെ. മണിപ്പൂരിലെ കർഷക സ്ത്രീകൾ നേരിടുന്ന പ്രധാന പരിമിതികൾ അപര്യാപ്തമായ സർക്കാർ പിന്തുണ, അപര്യാപ്തമായ വിപണന സൗകര്യങ്ങൾ, അപര്യാപ്തമായ ജലസേചന സൗകര്യങ്ങൾ, അപര്യാപ്തമായ ഫണ്ട്, അപര്യാപ്തമായ ഗതാഗത സൗകര്യങ്ങൾ, അപര്യാപ്തമായ വിപുലീകരണ സേവനങ്ങൾ, യഥാസമയം ഇൻപുട്ടുകളുടെ ലഭ്യതക്കുറവ്, അപര്യാപ്തമായ സംഭരണ സൗകര്യങ്ങൾ, മെച്ചപ്പെട്ട കൃഷി രീതി എന്നിവയാണ്. വിള പരിപാലനം അപര്യാപ്തമാണ്. കർഷക സ്ത്രീകളുടെ ജീവിത സുരക്ഷ മെച്ചപ്പെടുത്തുന്നതിന് കർഷക സ്ത്രീകൾ അനുഭവിക്കുന്ന പരിമിതികൾ പരിഗണിക്കേണ്ടതുണ്ട്.

കർഷക സ്ത്രീകളുടെ വികസനത്തിനുള്ള ധനസഹായം മെച്ചപ്പെടുത്തുക, ഗുണമേന്മയുള്ള വിത്തുകളുടെ യഥാസമയം വിതരണം ചെയ്യുക, കൂട്ടുകൃഷി പ്രോത്സാഹിപ്പിക്കുക, കാർഷിക പിന്തുണാ സേവനങ്ങളുടെ മെച്ചപ്പെട്ട വിതരണ സംവിധാനം ഉറപ്പാക്കുക, വിപണനം, പിന്തുണ എന്നിവയെക്കുറിച്ച് ബോധവൽക്കരണം ചെയ്യുക എന്നിവയായിരുന്നു കേരളത്തിലെ അവരുടെ ഉപജീവന സുരക്ഷ വർധിപ്പിക്കുന്നതിനുള്ള പ്രധാന നിർദ്ദേശങ്ങൾ. അതുപോലെ വന്യമൃഗങ്ങളിൽ നിന്ന് സംരക്ഷിക്കാൻ വേലി സ്ഥാപിക്കുക, ആവശ്യത്തിന് സമയോചിതമായി ഇൻപുട്ടുകൾ വിതരണം ചെയ്യുക, മഴവെള്ള സംഭരണം പ്രോത്സാഹിപ്പിക്കുക, കാർഷിക യന്ത്രങ്ങളുടെ മതിയായ വിതരണത്തിനുള്ള നടപടികൾ എടുക്കുക. ഉപജീവന സുരക്ഷ മെച്ചപ്പെടുത്തുന്നതിന് മണിപ്പൂരിലെ കർഷക സ്ത്രീകൾ നൽകിയ പ്രധാന നിർദ്ദേശങ്ങൾ, സർക്കാർ

അടിസ്ഥാന പൊതു സേവനങ്ങൾ നൽകുക, വിപണനത്തെക്കുറിച്ച് അവബോധം സൃഷ്ടിക്കുക, മഴവെള്ള സംഭരണം പ്രോത്സാഹിപ്പിക്കുക, കർഷക സ്ത്രീകളുടെ വികസനത്തിന് ധനസഹായം മെച്ചപ്പെടുത്തുക, പൊതുഗതാഗത സേവനങ്ങൾ മെച്ചപ്പെടുത്തുക, നിലവിലുള്ള വിപുലീകരണം മെച്ചപ്പെടുത്തുക, സേവനങ്ങൾ, ഇൻപുട്ടുകളുടെ മതിയായ സമയോചിതമായ വിതരണം, ശീതീകരണ സൗകര്യങ്ങൾ ഒരുക്കുക, മെച്ചപ്പെട്ട കൃഷിരീതി കർഷക സ്ത്രീകൾക്ക് ലഭ്യമാക്കൽ എന്നിവയാണ്.

അസംസ്കൃത വസ്തുക്കളുടെ മതിയായ ലഭ്യത, കാര്യക്ഷമമായ ഗതാഗത സൗകര്യങ്ങൾ, വിപുലമായ വിപണന സൗകര്യങ്ങൾ, കൂടുതൽ ഉൽപ്പാദനത്തിലേക്കും ഉയർന്ന വരുമാനത്തിലേക്കും നയിക്കുന്ന മതിയായ ഫണ്ടുകൾ എന്നിങ്ങനെയുള്ള ഉപജീവന ഫലങ്ങൾ സംരക്ഷിക്കുന്നതിനായി കർഷക സ്ത്രീകളിലും ഡെലിവറി സംവിധാന തലത്തിലും ഉപജീവന തന്ത്രങ്ങൾ രൂപപ്പെടുത്തി.

Appendices

APPENDIX 1

KERALA AGRICULTURAL UNIVERSITY

COLLEGE OF AGRICULTURE, VELLAYANI – 695522

DEPARTMENT OF AGRICULTURAL EXTENSION

Dr. Sangeetha. K.G.
Assistant Professor
TSS, Vellayani

Dated: 16.03.2021

Sir/Madam,

Ms. Centy Ngasainao (Ad No. 2019-11-029), Post Graduate scholar in the Department of Agricultural Extension has taken up a research study entitled **"Livelihood security of farmwomen in Kerala and Manipur: A comparative analysis"** as part of her research work. The main objective of the study is to assess and compare the livelihood security of farm women in Kerala and Manipur and analyse the relationship between personal and socio-psychological characteristics of the respondents with livelihood security.

The list of variables supposed to have close association with the study, identified through extensive review of literature and discussion with experts is attached herewith. Considering your expertise in this field, I request that you may spare some of your valuable time for examining the variables critically as a judge to rate the relevancy of them. Kindly add any other dimension, if considered appropriate with necessary comments.

Please return the duly filled list at the earliest.

Thanking you.

Yours faithfully,

(Sangeetha KG)

TITLE OF STUDY: "LIVELIHOOD SECURITY OF FARM WOMEN IN KERALA AND MANIPUR: A COMPARATIVE ANALYSIS"

MAJOR OBJECTIVES: Assess and compare the livelihood security of farm women in Kerala and Manipur. Analyse the relationship between personal and socio-psychological characteristics of the respondents with livelihood security.

Personal, Socio-economic and psychological variables taken for the study

*Variables are given in **bold cases** and their respective meaning is explained for easy understanding of intended meaning. You may please rate the statement with a tick mark (✓) in the appropriate column against the statement with special reference to its importance to meet the objectives of the study.*

Sl no.	Independent Variable	Operational definition	Relevancy rating (R-relevant)				
			Most R	More R	R	Less R	Least R
1.	**Age**	Refers to the number of years completed by the respondents at the time of interview.					
2.	**Education**	Refers to the highest academic qualification achieved by the respondents through formal learning.					
3.	**Annual Income**	Refers to the sum total of the earnings of all the members of the family of the respondents from different sources in a year.					
4.	**Social Participation**	It refers to the degree or extent of involvement of the respondent in formal and informal social organisation.					
5.	**Family size**	Refers to the total number of members residing in the family.					

6.	**Family type**	It refers to whether the family is joint or nuclear.					
7.	**Land holding**	Land holding is operationally defined as the total farm area owned or leased by the respondent.					
8.	**Household assets**	Assets possessed by a farm family in the house at the time of data collection.					
9.	**Farm mechanization**	Defined as the possession of various machineries and implements utilised for agricultural operation in the farm by the respondent.					
10.	**Farming experience**	Refers to the experience of the respondents in farming and allied subsidiary occupation.					
11.	**Occupational status**	Refers to the kinds of occupation which are practiced by the members in the family for earning their livelihood.					
12.	**Extension agency contact**	Defined as the frequency of contact with extension agencies by respondent to gather information					

13.	**Scientific Orientation**	Refers to the degree to which the respondent is relatively ready to adopt scientific ideas related to agriculture.					
14.	**Management orientation**	Defined as the degree to which the respondent is oriented towards scientific farm management comprising of planning, production and marketing functions of the farm.					
15.	**Trainings received**	This refers to the number of trainings received by the respondent in various activities related to farm.					
16.	**Market orientation**	Refers to which one is oriented towards sale of agriculture allied products for better price based on analysing various prevailing infrastructure and market intelligence.					
17.	**Self confidence**	Self-confidence is defined as the extent of feeling about one's own powers, abilities and resourcefulness to perform any activity which the respondent desires to undertake.					

18.	**Decision making**	Refers to which the respondents is oriented towards making decision to solve particular problem.					
19.	**Resource recycling**	Refers to the reuse of various available resources in the farmer's field.					
20.	**Innovativeness**	It is defined as the degree to which the respondent is relatively earlier in adopting new ideas.					
21.	**Risk bearing ability**	Operationalized as the character of the farmer to deal with failure or uncertainty and being more intended on success.					
22.	**Credit orientation**	Refers to the favourable and positive attitude of the respondent towards obtaining credit from institutional sources.					
23.	**Self-reliance**	Refers to the extent to which a person relies on self for his future.					
24.	**Work commitment**	Refers to taking personal sacrifice and additional efforts to accomplish objectives.					
25.	**Adaptable**	Refers to the ability of respondents to respond quickly in any situation.					

26.	**Gender bias**	Refers to whether the male member influences the women in encouraging or dominating decision making.				
27.	**Mass media exposure**	It is the degree to which members are exposed to various mass media communication systems such as television, radio, newspaper, magazines and other social media.				
28.	**Media utilisation**	Defined as the degree to which the information obtained through various mass media are successful in producing a desired result in solving various agriculture related problems.				
29.	**Others if any, please specify:**					

LIVELIHOOD SECURITY: Livelihood security is defined as adequate and sustainable access to income and resources to meet basis needs which includes adequate access to food, potable water, health facilities, educational opportunities, housing, time for community participation and social integration.

COMPONENTS OF LIVELIHOOD SECURITY

Sl. No.	Components	Operational definition	Most R	More R	R	Less R	Least R
1.	**Food security**	It is operationalized as availability and access to balanced food at household level.					
2.	**Educational security**	It indicates the educational level of the family and access to educational facilities.					
3.	**Financial security**	It means having the ample economic status for fulfilling the livelihood requirements of the family.					
4.	**Habitat security**	Defined as housing with basic amenities.					
5.	**Health security**	It intends to measure the health status of the family and access to health care facilities.					
6.	**Social security**	It is operationalized as social participation and social status of the family.					
7.	**Occupational security**	It indicates the access to a regular and satisfied employment.					

8.	**Environmental security**	Includes indicators such as pollution free environment, access water resources, eco friendly farming practices and protection from natural calamities.					
	Others if any, please specify:						

APPENDIX 2
INTERVIEW SCHEDULE

Title: Livelihood security of farm women in Kerala and Manipur: A comparative analysis

Respondents No: Date:

1. Personal details

a) Name of the respondent:
b) Block:
c) Panchayath:

2. Personal and socio-psychological characteristics of the respondents

a) Age:
b) Family size: Male: Female: Total:
c) Annual income:
d) Educational level:

Sl. No	Category	Tick the response
1.	Illiterate	
2.	Primary school	
3.	Middle school	
4.	High school	
5.	College	
6.	Graduate and above	

e) Land holding

Sl. No	Size of the land (in ha.)	Tick the response
1.	Up to 0.5 acre	
2.	0.5 to 1 acre	
3.	Above 1 acre	

f) Farming experience: _____ years
g) Mass media exposure

Sl. No	Items	Regular	Occasionally	Never
1.	Newspaper			
2.	Radio			
3.	Television			
4.	Magazines or Publications			
5.	Internet			

h) Extension orientation

(Please state your response for the following items- Regular, Occasionally or Never)

Sl. No.	Personnel	Frequency of contact		
		Regular	Occasionally	Never

1.	Agricultural Assistant Officer			
2.	Agricultural Officer			
3.	Scientist			
4.	SMS of KVK			
5.	NGOs or Input dealers			

i) Scientific orientation

(SA= Strongly Agree-5, A= Agree-4, UD= Undecided-3, DA= Disagree-2, SDA= Strongly Disagree-1)

Sl. No	**Statements**	**SA (5)**	**A (4)**	**UD (3)**	**DA (2)**	**SDA (1)**
1.	New methods of farming give better results to farm women than old methods.					
2.	The way of farming by forefathers is still the best way of farming.					
3.	Even a farm woman with lots of experience should use new methods in farming.					
4.	A good farm woman experiments with new ideas in farming.					
5.	Though it takes time for farm women to learn new methods in farming, it is worth the efforts.					
6.	The traditional methods in farming have to be changed in order to raise the standard of living.					

j) Risk orientation

Sl. No	**Statements**	**Agree (2)**	**Disagree (1)**
1.	A farm woman should grow large number of crops to avoid greater risk involved in growing one or two crops		
2.	She should rather take more of a chance in making a big profit than to be content with a smaller but less profit		
3.	A farm woman who is willing to take greater risk than the average farm women usually does better financially		
4.	It is good for a farm woman to take risk when she knows her chance to success is fairly high		
5.	It is better for a farm woman not to try new farming methods unless most others have used them with success (-)		

6.	Trying an entirely new methods in farming involves risk but it is worth.		

3. Food security

3.1. Availability of food (A-3= Agree, UD-2= Undecided, DA-1=Disagree)

Sl. No	Statements	A (3)	UD (2)	DA (1)
1.	I have sufficient availability of food to feed my family throughout the year.			
2.	I think the basic daily food intake of my family has improved.			
3.	I have affordable balanced food with existing income.			
4.	I need to reduce food expenditure to meet other needs. (-)			
5.	I borrow food grains/money to buy food. (-)			

4. Occupational security

Sl. No.	Statements	Tick the response
1.	Do you have an occupation according to your qualification?	Yes / No
2.	Is your income sufficient to meet basic livelihood needs throughout the year?	Yes / No
3.	Does your family get employment round the year?	Yes / No
4.	Do you take loan from any source?	Yes / No
5.	Do you have coverage of insurance policy?	Yes / No

5. Educational security

Sl. No	Statements	Yes (2)	No (1)
1.	Do you have access to information regarding education opportunities for children?		
2.	Do you send your children to English medium school?		
3.	Do any child got college education?		
4.	Do you send your children out of town for higher education?		
5.	Did any of your child quit learning due to financial problem	1	2
6.	Are you capable of supporting your child's learning at home?		

6. Habitat security

Sl. No.	Statements	Yes (2)	No (1)
1.	Is the house own by you?		
2.	Is there adequate electric supply?		
3.	Is there adequate water supply?		
4.	Is there proper transportation facilities?		
5.	Is there proper toilet or bathroom facility in the house?		

7. Health security

7.1. Access to health services

Sl. No.	Statements	Agree (2)	Disagree (1)
1.	I depend on local hospital for most of my health issue.		
2.	I travel outside town for better health care services.		
3.	There is availability of affordable health care facilities.		
4.	I have coverage of health insurance policy.		

7.2. Health status of the family

Sl. No.	Statements	Yes (1)	No (2)
1.	Is there incidence of chronic disease (cough, cold, asthma etc.) to the family members in past 6 months?		
2.	Is there incidence of any specific disease like TB, Diabetes, Heart problems etc. to family members?		
3.	Is there incidence of epidemic disease like malaria/ chicken pox/ typhoid etc. in the last five years?		

8. Social security

Sl. No.	Statements	Tick your response
1.	Is there any social organisation in the society?	Yes/ No
2.	Are you a member of any social organisation?	Yes/ No
3.	What is your extent of participation in the social organisation?	Very much/ Sometimes/ Rarely
4.	Does the social status of your family help to improve your livelihood?	Yes/ No

Availability and accessibility of resources and infrastructure

1. Availability of natural resources

Sl. No.	Statements	Yes/No
1.	Do you have enough land for cultivating crops?	
2.	Is there accessibility of safe drinking water?	
3.	Is there enough water available for irrigating the crops?	
4.	Is the water available throughout the year?	
5.	Do you have adequate inputs required for cultivation?	
6.	Do you possess adequate livestock or other natural components to support farming?	
7.	Do you have any other natural resources to support your livelihood? If yes, please mention.	

1. Financial amenities

Sl. No.	Statements	Yes/No
1.	Is banking services available?	
2.	Is ATM available?	
3.	Is credit facilities available?	
4.	Is Self Help Group (SHG) available?	
5.	Do you get any financial assistance from government to improve farming? If yes, please mention.	

2. Communication and transport facilities

Sl. No.	Statements	Yes/No
1.	Is there good linkages of road from your area to the nearby cities/town?	
2.	Is there good network coverage of mobile phones?	
3.	Is there good internet connection?	
4.	Is there regular newspaper supply?	
5.	Do you have good radio signal?	
6.	Does your television have good cable network?	
7.	Is there availability of post office in the area?	

3. Miscellaneous facilities

Sl. No.	Statements	Yes/No
1.	Is there availability of structured market?	
2.	Is Public Distribution System (PDS) shop available?	
3.	Is Anganwadi centre (Nutritional centre) available?	
4.	Is Community centre or hall available?	
5.	Do you transform your farm produce to value added products?	

Constraints experienced by the farm women in achieving livelihood security:

1.

2.

Suggestions for improving the livelihood security of farm women:

1.

2.