

**CASE STUDY OF CHANGE IN CONSUMPTION PATTERN  
OF FARMERS IN JAMMU REGION UNDER PM-KISAN  
SAMMAN NIDHI**

**By**

**ASHISH VERMA**

**J-20-M-714**

Thesis submitted to Faculty of Agriculture

In partial fulfillment of the requirements

For the degree of

**MASTER OF SCIENCE IN AGRICULTURE  
AGRICULTURAL ECONOMICS**



**DIVISION OF AGRICULTURAL ECONOMICS AND ABM  
Faculty of Agriculture**

Sher-e-Kashmir University of Agricultural Sciences & Technology of Jammu Main Campus,  
Chatha, Jammu - 180009

**2022**

## CERTIFICATE-I

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This is to certify that the thesis entitled " Case study of change in consumption pattern of farmers in Jammu region under PM-KISAN Samman Nidhi " submitted in partial fulfillment of the requirements of the degree of of Master of Science in Agriculture (Agricultural Economics) to the Faculty of Agriculture, Sher-e-Kashmir University of Agricultural Sciences and Technology of Jammu is original work and has similarities with published work not more than minor similarities as per UGC norms of 2018 adopted by the University. Further the level of minor similarities has been declared after checking the manuscript with URKUND software provided by the University.

The work has been carried out by Mr. Ashish Verma, under my supervision and guidance. No part of the thesis has been submitted for any other degree or diploma. It is further certified that help and assistance received during the course of thesis investigation have been duly acknowledged.



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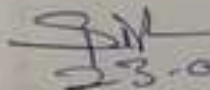
  
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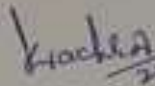
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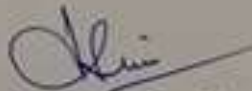
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## ABSTRACT

Title of the Thesis:	:	Case study of change in consumption pattern of farmers in Jammu region under PM-KISAN Samman Nidhi
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## ABSTRACT

PM-KISAN is a central government funded scheme launched in December 2018 to help farmers purchase various agricultural inputs. Payments under the scheme started in February 2019. It provides to each eligible farmer's family 6000 Rupees (₹) per year in three instalments of ₹ 2000 each. Adesina (1996) found that access to credit encourages fertilizer use. Also, Cash transfer increases the net incomes of farmers and thus, in turn, may enhance their risk-taking capacity, leading them to undertake riskier but comparatively more productive investments. However, the impacts of cash transfers on agriculture sector are comparatively less studied including their impact on technology adoption. In this context, investigation for finding the utilization of funds by farmers for agricultural and non-agricultural purposes, change in the consumption of agri-inputs by the beneficiary farmers and non-beneficiary farmers of this scheme and study for the variables influencing the change in consumption pattern and constraints in the implementation of this scheme. It was observed that an overall increase in consumption for agri-inputs like DAP by 12.46%, Urea by 9.78%, Pesticide by 25.60%, and Weedicide by 24.09%, Disease control chemicals by 20.09% and Seed treatment by 7.08% in beneficiary farmers. For the analysis, percentage change method was used. The primary survey included sources such as farm records, farm budgeting and bank statements of beneficiary farmers. The same was also analyzed for non-beneficiaries of the schemes; so as to study the impact of the change in consumption pattern. It was also found that the scheme had increased the consumption of agri-inputs especially in usage of chemicals for production of local paddy. The influence of variables such as education-level and number of earners in utilization of funds provided through PM-KISAN was found to have positive impact. Thus, it could be concluded that a major impact was observed due to injection of funds to the farmers under PM-KISAN Samman Nidhi Scheme.

Keywords: PM-KISAN, Cash Transfer, Agri-inputs.

  
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Signature of Major Advisor

  
Signature of the Student

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Chapter-1

# *Introduction*

### INTRODUCTION

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In India, agriculture is considered as a backbone sector in its economy. Not only because it provide 54.6 per cent population with jobs but also because it has been a sector which provide strength to other sectors. Whether it may be raw material to industries or food grains to feed people. But in recent years, agriculture sector has lost its popularity as an occupation. This may be due to various reasons but the most basic is due to low return on its investment. Indian farmers are majorly marginal farmers owning less than one hectare of land. Mostly, an Indian farmer borrows money or invests his personal saving for inputs such as seeds, fertilizers, chemicals, etc. and waits for the harvest to fulfil his needs sometimes even the basic ones. But mostly after harvest, farmer is not able to get his full return as he is not able to sell his produce even at his cost of cultivation. This is due to enormous increase in the supply of produce in the end of cropping season (particularly in case of paddy-cultivators). This results in creating a situation of cash crunch for a marginal farmer. Economically, we can term this situation as “Liquidity Constraint” of a farmer who has his produce in form of an asset but he is not willing to sell as of fear to incur losses. So, it may lead him to either compensate his demand by borrowing cash or by reducing consumption level. Most farmers consider borrowing as their last resort and also tried to reduce their consumption. Reduction in consumption leads to reduction in investment in an economy (Keynes, 1936). In other words, we can say that if people reduce their consumption for consumer and capital goods; then it's obvious that industries will reduce to invest capital in producing them. As the investment in a country reduces this leads to reduction in the income level of population. In an expanding economy such a situation of farmers in country like India is a big problem and an opportunity to be solved. It is an untapped potential section of society in terms of consumers that will not only increase the consumption level of agri-inputs (i.e. agricultural inputs) in the market but can also play a leading role in increasing the overall income of nation.

Conditional Cash Transfer (CCT) is a term used in worldwide for transfer of cash to the poor households on the condition to expenditure in cash for productive and welfare purposes such as education, health, and supplies. Countries have been adopting or considering adopting conditional cash transfer (CCT) programs at a progressive rate. In some countries like Brazil, Ecuador, and Mexico, CCTs have become one of the largest social assistance programme that cover millions of households. They have been hailed as a way of reducing inequality, especially in the highly unequally wealth distributed countries of Latin America, to help households breakout the vicious cycle whereby

poverty is carried over from one generation to another; and to promote child health, nutrition and schooling; and of helping countries meet the Millennium Development Goals (UNDP, 2015). Nancy Birdsall, of the Centre for Global Development defined CCTs “as close as you can come to a magic bullet in development” (Dugger 2004). An Article in the Institute of Development Studies Bulletin referred to CCTs as “Superfluous, pernicious, atrocious, and abominable” (Freeland 2007, P.75); and argued that they represent an impractical way to improve the use of social services (particularly in low income countries) and are immoral because they may deprive the neediest people of the assistance they deserve. Events after its criticism by some critics, CCT programs often are described in both extremely positive and negative terms. Our review of the CCT experience is that it has been effective in the sense that there is a solid evidence of their positive impact in reduction of short term poverty and also an increased usage of education and health services. Those achievements didn’t minimized because they are powerful proof that well-designed public programs could have a significant effects on critical social indicators. At the same time, we should review the reasons that should be cautious and avoid transforming the obvious virtues of CCTs into a blind advocacy campaign in supporting them. Fifty years ago, Albert Hirschman (1958) argued that development is a ‘Chain of Disequilibria’ whereby the expansion in one sector could create backward or foreword pressure that can provide the necessary stimulus for the expansion of another sector, which is still under developed. Although it’s still too early to conclude that the current wave of CCT programs will produce those results; but the experience so far provides room for hope.

CCTs has been very popular in India through various schemes such as Janani, Suraksha Yojna (JSY, 2005), Dhanlakshmi (2008), Sarva Shakti Abhiyan (SSA, 2003), Balika Sammidhi Yojna (1997). But in agriculture, CCT was first implemented by government of Telangana through Rythu Bazar Scheme (also known as Farmer’s Investment Support Scheme (FISS)) which is a welfare program to support farmer’s investment for two crops a year. It was announced by Chief Minister of Telangana, K. Chandrasekhar Rao at Jayashankar Agriculture University on 25 February, 2018. Later was launched on 10 May 2018 at Dharmarajpalli Villages at Karimnagar District. The scheme offers a financial help of 10,000 per year to each farmers (two crops). It covers an area of around 1.43 crore acres and number of farmers around 58.33 lakhs. A similar scheme was started by the government of Andhra Pradesh through Scheme namely, “Annadatha Sukhibhava”. In this Scheme, government was to provide ₹ 15,000 investment support to small and marginal farmer’s family per annum that will include ₹ 6000 from PM-KISAN Sam-man Nidhi. Currently it covers around 64.1 lakh farmers including tenant farmers. Also, the KALIA Scheme by Odisha government that provides ₹ 5000 per farm family over five season and covers around 6 million families.

Following up with the success of Rythu Bazar, Union government; on the view to augment the income of Small and Marginal Farmers (SMFs). The Government has launched a new Central

Sector Scheme, namely “Pradhan Mantra Kisan Samman Nidhi” (PM-KISAN) in the FY 2019-20. PM-KISAN Scheme aims to supplement the financial needs of the small and marginal farmers in procuring various inputs to ensure proper crop health and yields, commensurate with the anticipated farm income at the end of each crop cycle. It would also protect farmers from falling in the traps of moneylenders for meeting such expenses and ensure their continuance in the farming activities.

The number of eligible SMFs under the scheme have been estimated on the basis of projection of agricultural census 2015-16 data for FY 2018-19. The projected number of holding of SMFs landholder farmer families for FY 2018-19 were 13.15 crore. Due to likely exclusion of certain categories of beneficiaries of higher economic strata, the total number of eligible beneficiaries have been taken as 12.50 crore. Under the scheme, a direct payment of ₹6000 per year is been transferred in three equal instalments of ₹ 2000 each every four months into the aadhar ceded bank accounts of eligible landholding SMFs families. The first instalment for period 01.12.2018 to 31.03.2019; under the scheme is been transferred to the eligible beneficiaries in the current financial year (2018-19) itself. First instalment was been transferred immediately on identification of the beneficiaries.

Studies showed that CCT experience has been so far confirmed that they have been effective in reducing short-term poverty and increasing the use of various services in overall welfare (Fiszbein & Schady, 2009). In countries that have high initial level of inequality and have been implementing CCT schemes for a family long period, it has been observed that the programmes contribute to reduction in inequality (Soares et. al. 2007, P.17).

Positive impact on school attendance rates and consequently in the number of years of schooling attained (Reimer et. al. 2006). CCT schemes have been found to have a major impact on reducing children’s participation in the labour market (Skoufias 2005). It leads to promote more regular health check-ups among pregnant women and children in countries with good and functioning health infrastructure (Soares *et al.* 2008). It has also aided women in having a greater role in decision-making in improving self-confidence and in enabling them to participate more effectively in community meeting (Skoufias 2005).

There has been various problems and constraints. Major one is the policy dilemma in design that includes (a) Transfer of benefits under CCT related which is also known as “scheme dependency syndrome”; b) Time frame: related to the requirement of extensive duration of scheme; (c) Expensive-requirement of human capital for verification. Another main limitation of the CCT schemes was that they assumed that easing of the demand constraint will lead to desirable outcome with respect to human capital formation. The evidence clearly showed that this is true only in areas where the supply side constraints are not severe. Opportunity costs ignored could also be considered as major constraints as often the implementation of CCT schemes could mean resources drawn away

from other scheme which could benefit the social sectors more generally. Other constraints include duration and exit strategy. One of the main constraints of CCT schemes was the short duration of three years that a beneficiary family is generally supposed to be in the programme. Given the minimal objectives of addressing short-term poverty and enhancing human capability in the long-run, the programme duration is grossly inadequate to meet this challenge. Lastly capacity constraints can be counted as a constraint for underdeveloped countries for both financial as well as administration.

### **PM-KISAN SAMMAN NIDHI YOJANA:**

Pradhan Mantri Kisan Samman Nidhi (PM-KISAN) also translated as Prime Minister's farmers tribute fund is there any initiative by the government of India in which farmers are getting 6000 rupees per year as minimum income support. The initiative was launched by the then current finance minister Mr. Piyush Goyal during the 2019 interim union budget of India on 1 February 2019. This scheme had cost about 75,000 crores per annum and has been effective from December 2018. Through this scheme ₹ 6000 per year are been paid to each eligible farmers in three instalments and are deposited directly to their bank accounts. There are three main objectives of this scheme:

1. To augment income of marginal, small and semi-medium farmers SMFs
2. PM KISAN scheme aims to supplement the financial needs of SMFs In procuring many inputs to ensure proper crop health and appropriate yield, commensurate with the anticipated farm income at the end of each crop cycle.
3. To protect farmers from falling in the clutches of moneylenders for meeting such expenses and ensure continue farming activities.

### **HYPOTHESIS**

The study conducted in this regard has hypothesized some statements as follows:

1. Funds provided through PM KISAN has been efficiently disbursed and utilized by marginal, small and semi-medium farmers.
2. There has been a significant change in the consumption pattern of farmers regarding agriculture after the implementation of PM KISAN scheme.
3. There are variables such as education-level, gender, number of earners etc which influenced the utilization of funds by farmers under the scheme.
4. There exist constraints in the implementation of the scheme by various government agencies.

### **OBJECTIVES OF THE STUDY**

1. To study the distribution and consumption of funds utilized from PM KISAN scheme
2. To study the change in consumption pattern after implementation of PM KISAN scheme

3. To study the variables and constraints influencing the consumption pattern of funds under PM KISAN scheme.

### **SCOPE OF THE STUDY**

Study was conducted in the area of Jammu region of Jammu and Kashmir UT based on the number of highest beneficiaries under the scheme in the region. Under this study PM KISAN was found to be implemented with maximum number of beneficiaries in Jammu district especially in the sub divisional area of R.S Pura. The study selected some extremely backward areas such as the villages from the Indo-Pak border (BOP) where agriculture and animal husbandry are the major source of income. These areas are major cultivators of paddy (especially basmati) and thus observed for change in consumption pattern of agri-input for its production. The villagers in this area survive through extreme instability and undergo hardship. Through this study at macro level we would get a picture of change in the consumption behavior and pattern which is been followed due to the impact of PM KISAN. The study will be useful for the administrative authorities in agriculture sector as a feedback. This study would help study prior growth in the advancement of agriculture sector with new technologies. Researchers would be benefited by conducting further studies that involves changes in the farmer's living standards and change in the livelihood pattern. For agri-input industries the study helps to know the demand of new products in the current scenario.

### **LIMITATION OF THE STUDY**

Current study is based on primary data collected at the village level interaction with the farmers. Though utmost care was taken to pull the exact information from the farmers there could be a chance for bias in the sampling, in the process of recollecting the memory by these farmers. Medium and large farmers were not present in required number in the selected villages so this study cannot be represented to all the categories of farmers.

Chapter-2

*Review of Literature*

**REVIEW OF LITERATURE**

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The adoption of modern technologies could be one of the most promising strategies to increase farmer's income. There are many constraints in the technology adoption, one of which is the lack of information and lack of credit availability (Varshney, Joshi, Dubey 2019). Other than this, studies have shown that the access of formal credit system has significantly increased in the investment of existing small businesses. But in India more than half of the farmers have not been facilitated with an access to formal credit system. In such a situation, introduction of conditional cash transfer scheme Such as Prime Minister Kisan Samman Nidhi, or PM KISAN which was launched in December 2018 has played an important role to ease liquidity constraints for Indian farmers.

The idea of Conditional Cash Transfer (CCT) has been extensively adopted especially in countries from South America over the last few decades (Adoto and Hoddinott, 2011; Fiszbein and Schady, 2009). These programs provide cash transfers to finance the current consumption needs but with a conditional situation to regulate the potential welfare and programme related to social and economic development (Banerjee and Duflo, 2011)

In a randomized experiments conducted in South American countries showed that there were tremendous increase in the education and growth of children's enrolled in the school due to the effect of CCT (Behrman and Parker, 2010; Fiszben and Schady, 2009). It was also noted that due to the implementation of CCT in the social welfare related to education sector in latin countries there was a decline in social evil such as child labour (Edmonds and Schady, 2012).

In general the effect of CCT was on the outcome of household consumption education attainment and health has shown tremendous growth (Gertler 2004; Fiszbein and Schady 2009, Adato and Bassett 2009).

But the particular impact of CCT in agriculture sector have been comparatively less studied specially in the impact on technology adoption (Sadoulet, de Janvry, and Davis 2001; Gertler, Martinez, and Rubino-Codina 2006; Haushofer and Shapiro 2016; and Tirivayi, Knowles, and Davis 2016). In studies, it has been shown that small monthly cash transfers CCT may lead to increase the consumption even after the beneficiary leaves the scheme or program (Gertler, Martinez, and Rubio-Codina (2006) and Handa *et al.* (2018).

Haushofer and Shapiro (2016) conducted studies which showed that if large and conditional transfers are given to poor households there may be increase in future earnings due to the encouragement of investment in agriculture and allied subjects such as livestock raising. Sadoulet, de Janvry, and Davis (2001) have studied about the multiplier effect in cash transfer.

Adesina (1996) studied the effect of access to credit transfer had increased the fertilizer use and also led to an increase in the overall net income of the farmer. This had an impact on enhancing the risk-taking capacity over comparatively more productive investments of the farmer. But yet these cash transfers are used in a limited way for productive activities and social welfare in developing countries (Maluccio, 2010).

Through this thesis we analyzed the productivity of differential direct cash transfer to study the heterogeneity which impacts the growth in the agriculture sector due to its effect (Galiani and McEwan 2013). Also we would study the impact of cash transfers on the adoption of technology and area which have received very less attention in the research topic and in literature (Gertler 2004; Adato and Bassett 2009; Fiszbein and Schady 2009). Hence this thesis reviewed, the literature which explores the mechanism for income enhancement as a consequence of cash transfer (Sadoulet, de Janvry, and Davis 2001; Gertler, Martinez, and Rubio-Codina 2006).

## **2.1. Distribution and consumption of funds utilized from PM-KISAN Scheme**

Parveen *et al.* (2010) examined the utilization of agricultural credit by the borrowers in Bangladesh in the year 1999. Results showed that current expenditure on farming was 52.58 percent, capital expenditure on farming was 12.79 percent, family expenditure was 34.60 percent and non-farm business expenditure was 0.03 percent of funds borrowed. It was observed that diversion of funds was seen more in case of small (36.92) and medium (32.69) farmers compared with large (32.17) farmers. Highest amount was diverted for purchasing food and next to repayment of previous debts and minimal diversions was seen in children's education, social ceremonies, repairing houses, medical treatment etc. Chahal

(2011) examined that utilization pattern of loans granted for different purposes in Haryana. Results showed that out of the total amount, 82.02 percent was used for agricultural purposes and 17.43 percent was diverted for different activities. Among these activities children's education accounted for 36.31 percent marriages for 23.23 percent, construction of houses for 17 percent, health for 8.80 percent, repayment of old dues for 5.57 percent, liquor consumption for 4.35 percent and pre-borrowing expenditure for 3.04 percent of loan amount diverted on an average.

Alexpandi and Ramesh kumar (2014) examined the utilization pattern of borrowed money for different activities in Madurai district of Tamil Nadu in the year 2010. Results shows that out of the total funds 78.23 percent was utilized for agricultural activities and 21.77 percent was deviated for different activities like 52.54 percent for delay in getting loans, 13.56 percent monsoon failure, 11.86 percent for Social ceremonies, 10.17 percent for clearance of old debts, 8.48 percent for unexpected family expenses, 3.39 percent for other reasons.

Jain (2014) examined the utilization pattern of rural credit in tribal women self-help group in Baran district of Rajasthan. Results showed that 70 percent of the respondents were utilizing the loan amount for the purpose it was taken like pickle making, cot making, papad making, stitching, shops, and for making woollen items and the 30 percent of the respondents were diverting the fund.

Sharma and Kumawat (2014) examined the utilization of loan amount for different purposes by the borrowers in Jaipur district of Rajasthan. Results showed that 70.59 percent of borrowers utilized the credit for the purpose it was granted, 23.98 percent of the farmers was partially used the credit for productive purpose and 5.43 percent of the borrowed credit was completely diverted. It was observed that out of the total amount which was used for productive purpose highest amount was dedicated for purchasing sprinkler system and lowest amount was used for cultivation purposes. Out of the total amount diverted the highest diversion was seen in repayment of previous loans and lowest was observed to purchase sprinkler system.

Baba *et al.* (2015) examined the utilization pattern of institutional credit by the farmers in Jammu and Kashmir. Methodology used in the study was OLS. Results showed that 65 to 98 percent of the farmers utilized the funds for productive purpose in different zones of the study area and 1.6 to 34.7 percent of the farmers diverted their funds. The study suggested that to avoid the diversion of the loan amount given for the productive purpose certain amount should be given to the farmers for consumption purpose along with loan amount.

Chavan *et al.* (2016) analyzed the utilization of agricultural credit (for loans taken-redgram and cotton crops) within commercial and cooperative banks in Karnataka in the year 2015. Methodology used was averages and percentages. Results showed that loan taken for red gram crop in commercial bank was utilized by small and large farmers for productive purposes was 76.78 and 96.97 percent and diversion of loans was 23.22 and 3.03 percent, respectively. In case of cooperative banks loan utilization by small and large farmers for productive purpose was 77.36 and 93.26 percent and diversion of loans was 22.64 and 6.74 percent. In case of cotton crop in commercial bank loan utilization by small and large farmers for productive purpose was 85.72 and 95.51percent and diversion of loans was 14.28 and 4.49 percent. In cooperative banks loan utilization by small and large farmers for productive purpose was 81.38 and 96.16 percent and diversion of loans was 18.62 and 3.84 percent. It was observed that within productive utilization highest amount was allocated for labor wages, followed by purchasing fertilizers, plant protection chemicals, manures, marketing and handling charges and the least amount was allocated for purchasing seeds.

## **2.2. Change in consumption pattern after implementation of PM-KISAN Scheme.**

Breen *et al.* (2005) examined farmers' likely response to decoupling in Ireland in the year 2002. The principal focus of the study was whether farmers would cease agricultural production and only maintain their land to claim their decoupled payment. Linear programming model was used to analyse the data. These result showed that there was approximately 3/4<sup>th</sup> of the farmers didn't showed interest to change their cropping pattern and 6 per cent of farmers utilized their property to claim decoupled payment.

Goodwin and Mishra (2005) examined the effect of direct payment receipts during FAIR Act on acreage decisions of Corn Belt farms in U.S.A. Period of study was from 1994 to 2001. Censored regression model

was used. Result showed that direct payments did not appear to change acreage adjustments among Corn Belt farms. On an average only one third of direct payment was used for household purposes and rest for farming. The results however could not strongly confirm that the direct payments would be directed at increasing production by buying additional land or leasing in land from other cultivators. Risk averse farmers were found to be less likely to use direct payments for on-farm uses while rich farmers who were capable for tolerating risk had high probability of using it for farming purposes.

Girante *et al.* (2008) examined the effects of decoupled payments and acreage decisions on wheat, corn, sorghum, soybean in Kansas (U.S.A). Period of study was from 1996 to 2001. Econometric models were used to analyze the data. Results showed that uneven distribution of decoupled payments benefited more to large farmers than to the small. When Agricultural Market Transition Act (ATMA) payments increased by \$ 1000 an increase of 3.5 to 4.7 acres can be seen in total crop acreage, and these payments did not show any increase in owned acres. Soybean and corn acreage were increased by 1.3 acres when ATMA payments was increased by \$ 1000 and a decrease in wheat and sorghum acres can be seen.

Key and Roberts (2008) examined the relationship between levels of agricultural payments per acre with shift in crop acreage in Iowa State of the United States of America for the period 1997 to 2002. Matching methodology was used to analyze the data. Results showed that the farmers who received higher payments increased their crop acreage in percentage points 2.6 to 6.7 than the farmers receiving low levels of payments. Influence of agricultural payments in acreage decision was very limited to poor farmers and they are more beneficial to large farmers as payments were given on the basis of acreage.

Kammar (2010) examined changes in the cropping pattern in Northern transitional zone of Karnataka. Period of study was from 1977-78 to 2006-07. Methodology used to analysis the data was tabular analysis. Results showed that according to season wise analysis shift in cropping pattern was seen in sugarcane, maize and cotton in kharif season and in rabi season changes in cropping pattern was observed in sorghum, paddy and maize.

O'Donoghue (2010) examined that effect of direct payments on acreage planted at the county level with focus on entry and exit of farms in U.S.A. for the period 2001 to 2003. Regression model was used in the study. Results showed that due to direct payments, 0.2 per cent of cultivable land had been increased. Economies of scale were observed in large farms and small farms were close to ceasing agricultural operations.

Rahimi (2014) examined changes in cropping pattern in Karnataka state. Study period was from 1988-89 to 2008-09. Tabular analysis was used to analyze the data. Results showed that increase in the area of crops was observed in paddy, green gram, sugarcane, soybean, onion and bengal gram, maize. Decrease in the area was observed in crops like sweet potato, sorghum, linseed, horse gram, coriander and safflower.

Manwar (2017) examined the changes in cropping pattern in Wardha district of Maharashtra. Period of study was from 2005-06 to 20014-15. Methodology used to analyze the data was tabular analysis. Results showed that the area in cotton crop was increased and decrease in the area was observed in crops like soybean, blackgram, kharif sorghum and green gram.

Waghmode (2017) examined the changes in cropping pattern in Yavatmal district of Maharashtra. Period of study was from 2003-04 to 2015-16. Methodology used to analyze the data was tabular analysis. Results showed that over the period the sesamum, kharif sorghum and urd has decreased in the area and cotton crop has increase in some areas and decreased in some other areas.

Waghode (2017) examined the changes in cropping pattern in Buldhana district of Maharashtra. Period of study was from 2003-04 to 2015-16. Methodology used to analyze the data was tabular analysis. Results showed that area in tur and soybean increased enormously, area in green gram, sesamum, kharif sorghum and black gram reduced and in cotton increase and decrease in different areas was observed.

### 2.3 Variables and constraints influencing the consumption pattern of funds under PM-KISAN Scheme

Variables that are considered to have an influence in the change in consumption pattern of funds due to PM-KISAN Samman Nidhi Scheme are as follows:

#### a) Consumption of Household:

Rao *et al.* (1982) summarized that, on an average consumer of Vijayawada spent approximately 56 per cent of their total expenditure on food items and rest about 44 per cent on non-food items. Among the items cereals occupied nearly 14 per cent which was followed by milk and derived products with 11 per cent of the total expenditure, egg and meat were about 7 per cent fat and Oil about 4 per cent and expenditure on pulses were even less than 3 per cent of their total expenditure.

Saroj Kothan (1990) concluded a balanced diet for sedentary man per day per person. The recommendations given by “National Nutrition Monitoring Bureau” (NNMB) for a dietary requirement after conducting survey of different commodities.

Food Group	Quantity Required
Cereals	460 gms
Pulses	40 gms
Milk and derived product	150 gms
Fruit & Vegetables	160 gms

Bhuyan (1992) studied the consumption pattern of tribal population live in Odisha State. The study revealed that, monthly per capita consumption expenditure of tribal household were about ₹ 64. The tribal allocated 81 per cent of their total consumption expenditure on food items and rest 19 per cent on

non-food items. Overall tribal of Odisha allocated more than 48 per cent to total consumption. Outlay on the consumption of cereals and millets includes which 2 per cent each on pulses and spices, 4 per cent were on clothing and footwear, 1 per cent on entertainment and 2 per cent on miscellaneous items. The per head consumption observed to be negative in case of tribal households engaged in forestry and Industrial activity.

Das (1993) estimated demand equation for pulses for lower and higher income groups in rural and urban India separately. The per capita consumption of pulses was substantially lower for rural area than for urban area. The per capita monthly consumption of pulses declined from 1.50 kg in 1961-62 to 0.78 kg in 1986-87 (by 48 per cent) for rural area and from 1.53 kg to 0.97 kg (by 36 per cent) for urban areas for the same period. During 1986-87, lower 25 per cent of rural population consumed about only 41 per cent (0.48 kg/month) of the rural population. During 1986-87, per capita monthly consumption of pulses varied between 1.11 kg in Uttar Pradesh to 0.44 kg in West Bengal in the rural area and from 1.12 kg in Madhya Pradesh to 0.64 kg in West Bengal in urban area.

Kaser *et al.* (1993) study revealed that the pattern of consumption expenditure in irrigated command area, rain-fed area and watershed development area. It was observed that a decline in the food consumption expenditure with an increase in the size of holding. Overall annual consumption expenditure in irrigated command area were estimated at about ₹ 12160.00 per family per capita consumption of cereals and pulses at national level. Per family average consumption of cereals, pulses and oil were estimated at 1039.90 kg, 61.51 kg and 11.90 kg per annum, respectively in watershed development area. About 1/3<sup>rd</sup> and 1/5<sup>th</sup> of consumption of cereals and pulses were procured from the market in medium and large size of holdings.

Kumar *et al.* (1995) studied “Consumption pattern of farm families” was conducted in Akola district in the year 1989-90. The overall level of actual consumption of cereals per unit per adult in a day was 472.88 gms i.e. 99.55 per cent on a recommended level. The consumption of vegetables and fruits were about 206.79 gms i.e. 89.91 per cent of the recommended level. Meanwhile consumption level of other essential food items like pulses, edible oil, milk and milk product, non-vegetarian were far below the recommended levels and worked out to 39.17, 31.77, 21.13 and 19.69 per cent respectively of the recommended levels.

Birthal (1996) conducted study on nutrient consumption pattern in rural areas in villages of Moradabad district in western Uttar Pradesh. The sample that were obtained were then divided into five groups i.e. landless, marginal, small, medium and large farm household. The results summarized that wheat and rice were the main cereals consumed by the sample households. Mean consumption of cereals were found to be 358 gms/person/day and the cereals

shared 19.15 per cent of the total food expenditure. Consumption of pulses, which were generally considered to be low-cost protein sources for vegetarians, amounted to 42 gms/person/day and shared 8.54 per cent of the food expenditure. On an average, consumption of vegetables and fruits, which are rich in minerals and vitamins, stood at 151.25 and 28.49 gms/person/day respectively with an average food expenditure share of 8.39 and 4.09 per cent. Per Capita consumption of ghee and milk were found to be 6.56 and 173.54 gms per day and these along with other dairy products accounted for 22.73 per cent of the total food expenses. Consumption of non-vegetarian foods, like meat and eggs were 8.60 and 5.77 gms/day respectively with a combined budget share of 7.83 per cent. The low consumption of these products were basically due to composite effect of various social, economic, psychological and cultural factors.

Sardana *et al.* (1996) made an attempt to evaluate change in consumption pattern of food across the income groups and state over the years. Based on the results, they concluded that the consumption expenditure data from NSS of Data (1956-66) and 43<sup>rd</sup> (1987-88) rounds, it was observed that, the consumption expenditure in cereals and its substitutes have decreased. This indicated an overall improvement in income level of masses. Indian rural population have started spending more on pulses and related products, milk and related products, edible oils, eggs, meat, fish and vegetables. It was mostly being done at the cost of other food and non-food items. This buying behavior was in line with Engel's first law. In most of the food items, the increase in consumption expenditure in 1987-88, over 1965-66 was higher in the rural area as compared to the increase in the urban area except meat, egg and fish, fruit and nuts. Thus it was seen to be over a cautions while planning production programme in the light of new opportunities thrown by agricultural trade globalization.

Chand Ramesh and Praduman Kumar (2002) evaluated the long term changes in coarse cereal consumption in India. The study had revealed that, in all the years during 1983-84 to 1999-2000, per capita consumption of total cereals increased consistently with improved income-level. For consideration during 1983-84, per person monthly consumption of cereals in very poor households was 11.00 kg which increased to 13.05 kg in the next higher income group. As income raised to a further extend above the poverty line per capita monthly consumption of cereals raised to 14.39 kg and 15.95 kg for non-poor and rich households respectively. During 1999-2000 per person monthly consumption of cereals in very poor households was 9.93, which increased to 11.40 kg in the next higher income group. The above poverty line per capita monthly consumption of cereals raised to 12.18 kgs and 12.64 kgs for non-poor and rich households, respectively.

**b) Gender:**

Terman and Miles (1936) attempted to assess the untangling the intricate threads of masculinity and femininity began in the 1930s when the first assessment of gender identity was attempted (Terman and Miles 1936). They found that there existed an undeniable relationship between gender and behavior of purchase.

Aiken (1963); Vitz and Johnston (1965) first attempted to study that gender identity and its consumer-related behavioral studies. They found that gender does have a greater influence in the consumption of consumer goods. Even though this effect has been studied in a limited amount of consumable goods.

Bem (1974); Spence, Helmreich, and Stapp (1975) studied of gender identity in consumer research intensified, continuing into the 1980s and 1990s. They try to correlate the relationship between gender identity with the buying factor and intensity to purchase. They found that there does exist a positive relationship but not that strongly influential.

Spence (1984) conducted a study regarding the history of relation between sex and gender with consumption. He found that process of consumption has long been associated with sex and gender, thus, it came as no surprise that consumer researchers often examine the effects of these variables on consumer behaviors. It was also found that much was known about sex and gender and how they impact buying and consuming activities. Yet there was one gender-related variable, gender identity that had both intrigued and perplexed consumer behavior researchers for over four decades. He also defined gender identity, as an individual's psychological sex, and had been defined it as the "fundamental, existential sense of one's maleness or femaleness".

Roberts (1984) suggested that the inclusion of gender identity in consumer research was unproductive and should be abandoned his further study as significance of gender identity findings in consumer research had been rare, caused some as early as the mid-80s.

Firar (1991) and Lemer (1986) derived that gender identity was similarly rooted in cultural understandings of what it means to be masculine or feminine. For many years, sex and gender were thought to be inseparable i.e., men were masculine and women were feminine. But what consumer behavior researchers, among others, recognized long-time ago were that some men were more feminine than masculine while some women were more masculine than feminine. In the postmodern culture in which we now live, this separation of gender from sex was even more apparent.

Gould (1996) suggested that an inappropriate interpretation and its application of gender identity to consumer research variables produced contradictory results. He didn't agreed to the thought that there was any related masculinity or feminist approach to the consumption of commodities.

Palan *et al.* (1999) suggested several reasons have emerged to explain the lack of significant findings such as the operationalization of gender identity has stymied research; contributing to operationalization problems may be the inappropriate use of terms resulted in conceptual ambiguity.

Firat (1993) found that in more recent literature, the potential contribution of gender identity research to the understanding of consumer behavior has been questioned since the meanings of masculinity and femininity have blurred. Given these concerns, the purpose of this paper was to present a thorough review of consumer behavior studies in the marketing literature that had been examined for gender identity; it should be noted that the review had a Western (i.e., North American) bias, since the studies have all been based in Western societies.

Stern (1988) analyze and an updated review was necessary, not only to include consumer behavior studies that have been published since 1988, but also to examine the merits of gender identity research given the scholarship advances that have been made in this area in the past decade; Despite a previous review of gender identity research in consumer behavior.

Bernier *et al.* (2015) and Beuchelt & Badstue (2013) have found that researchers, policy-makers, and development practitioners increasingly acknowledge the importance of more effectively including gender in their work aimed at addressing climate variability and change (One reason was because investments in research, policy, and development actions have not yielded the widespread, beneficial impacts expected.

Ali (2015); FAO (2011); Peterman *et al.* (2014) ; UN Women (2015); World Bank & ONE reports (2014) suggested that it was evident that growth on the substantial cost of neglecting the large 'gender gap' that persisted in agricultural productivity and development in most countries. This cost were reflected not only in terms of persistent inequality, but also in missed opportunities that could have improved development outcomes. In the context of climate change, it was particularly important to understand, how gender mediates opportunities and challenges to increase agricultural productivity and livelihoods.

Aguilar & Kilic Oseni (2015); Backiny-Yitna & McGee (2015); Oseni *et al.* (2015); World Bank & ONE (2014) found that the gap in agricultural productivity between plots managed by men and women varies across countries and crops, but ranges from 4 per cent to 25 per cent when measured as the value of agricultural production per hectare across Sub-Saharan Africa.

Doss (2013) found that the measure of agricultural productivity was narrow, missing important activities typically carried out by women, such as food processing and preparation and livestock raising. Furthermore, it didn't account for joint farm management systems where

husbands, wives, and other family members all contributed for the production and their individual contributions can't be measured separately.

FAO (2011); Farnworth *et al.* (2016); and Wambugu, Place *et al.* (2011) suggested that women's unequal access to key agricultural inputs such as land, labour, knowledge, fertilizer, and improved seeds and seedlings contributes to the persistence of this gap.

Doss (2001); Doss & Morris (2001); Deere & Doss (2006); Peterman *et al.* (2011); Peterman *et al.* (2014); Perez *et al.* (2015) found that women also tend to have less decision-making authority and face additional social, cultural, and institutional barriers to accessing and adopting agricultural technologies. Till this current day, much of the analysis of gender gaps in resources or productivity in the context of climate change had been limited to the comparisons of households with and without adult men.

Sheahan & Barrett (2014) found in a study of six countries in Sub-Saharan Africa that female-headed households apply, use, and own significantly less improved or purchased agricultural inputs compared to male-headed ones.

However; Budlender (2003); Buvinic & Gupta (1997) concluded that this approach confounds gender and household structure (presence or absence of a man) and ignored the situation of the majority of women who lived in dual adult households - usually referred as 'male-headed'.

Bryan *et al.* (2013); Kristjanson *et al.* (2012); and Meijer *et al.* (2015) found that there were evidence points to widespread adoption of incremental changes in agricultural practices in developing countries, but relatively little uptake of transformative practices that made agricultural households more resilient and were able to deal with increasing rainfall variability and higher temperatures. These included improved soil and water management techniques, agroforestry, stress-tolerant seeds, animal breeds, and small-scale irrigation; among others.

### **c) Education:**

T. W. Schultz (1964) suggested after discussing the importance of the "allocative efficiency of traditional agriculture", that in general, where technically superior factors of production are a principal source of agricultural growth, schooling counts. This attribute of education has previously been suggested as one of the ways in which education enhances market productivity.

Nelson and Phelps (1966) suggested that education enhanced one's ability to receive, decode, and understand information. This helps in increasing the demand and consumption of goods and commodity that were advertised at a regular basis.

Welch (1970) showed that an important and clear analysis of the productive value of education has been made, and evidence of the "allocative effect" of education in agricultural production has been adduced.

Michael (1972) analyzed that although only this one estimate of the non-market efficiency effect were discussed, the larger monograph includes numerous others. For example, the regression equation was re-estimated including only the nine nondurables: food at home, food away from home, tobacco, and alcohol, household operations, personal care, medical care, leisure, and education; and using the constant elasticity form, the value of the coefficient was 0.50. This suggests that the eleventh year of schooling was equivalent to raising the household's level of total expenditure from \$5,000 to \$5,250. Obviously, these two estimates are considerably different in magnitude and are, at best, rough estimates. The monograph also considers a more detailed expenditure classification of 50 items and imposes certain constraints on the entire system of demand equations. Overall, the results are qualitatively similar to the result reported here as education appears to have a small but persistent positive effect.

Michael T. (1975) suggested that level of formal schooling directly influences consumer behavior independently of its effect on money income. Second, the results suggest that the effect of education was not a random or erratic one, but was systematically related to the changes in consumption patterns attributable to differences in levels of income.

**d) Number of Earners:**

Berger *et al.* (1978) studied that the job search and decision making process falls into three categories: traditional in, which the wife follows the husband; non-traditional, where husbands follow their wives; and egalitarian, a hodgepodge of miscellaneous choices including long-distance commuting or alternating careers between spouses. Dual career couples were interviewed and claimed that they tried to hold to an egalitarian choice but eventually wife followed the husband. The reason for these were not a reversal of beliefs but a pragmatic acceptance that the market catered more to the husband's career and he was more likely to be received at an earliest and most lucrative job offer.

Farris and Agnes (1978) analyzed that although not common among dual-career couples, commuting to jobs in widely separated cities has become an alternative for those who are dedicated to their careers yet married. Problems with commuting vary by the age of the couples, stage of career, and presence of children.

Lazear and Michael (1980) investigate the differential in standards of living for one- and two-earner families. Although the nominal family income difference was found to be high, there were several unique costs for two-earner families which reduced this advantage. The authors list

such decrements as higher tax rates, costs of employment, and paid substitutes for household services formerly provided by the housewife.

Lein and Blehar (1979) worked on “The Working Family Project”, an investigation of 25 middle class, dual-worker families with children under age 18, and its findings are reviewed. Children were found to be the most important aspect of the families’ lives, despite the fact that economic necessity were often limited to family size. Both men and women seemed reluctant to break with the traditional stereotype of breadwinner and homemaker, thus placing higher amounts of stress and toil on the working wife.

Mooney and Whitmer (1977) concluded that men who work in two-earner families earn less than husbands whose wives are not earners. The direction of causality was found to be from dual-earner family status to lower earnings. The hypothesis presented by the author was that the wife's salary adds to the permanent family income, inducing the husband into such activities as more frequent job mobility and a higher valuation of leisure. These results didn’t hold true for lesser educated and blue-collar families where there was a greater emphasis on traditional role stereotypes. Here the wife's income was viewed as transient and had less effect on the husband's labor force activity.

Blumber and Ganz (1977) analyzes the effects of current Federal income tax law on two-earner families. The work disincentive were higher because of the high marginal tax rate on the wives' earnings. In addition, the paper discussed about some of the major inequities in social security coverage, particularly the lack of any additional benefits paid to retired wives who didn’t worked outside the home. Several solutions were proposed to alleviate these disparities, including following some of the more equitable policy examples of other Western nations.

Gregory and Moore (1977) examined several variables which affect the labor force participation and hours worked of married women. Presence of children were the most influential, followed by wages, husband's income, and education. All variables had a more significant impact on young women.

Hayghe and Howard (1979) found that nearly 1 out of 4 husband-wife families encountered some period of unemployment during 1977. For the most part, only one member in these families was unemployed at any given time, usually the wife or teenage son or daughter. In most families where the wife or other relatives were jobless at some time, the husband worked full time.

Monthly Labor Review, October (1979) published a record number of wives contributed significantly to their families' economic welfare in 1977. Over half of all wives worked at some time during the year earning approximately one-fourth of their families' income. Married

mothers were the most likely to have earned income, as well as the most part to work only part-time or part-year. Wives still worked mainly in the traditional female-dominated occupations, but were moving slowly into male-dominated fields.

Horvath (1980) analyzed that past studies have found that the contribution of wives' earnings to family earnings tends to equalize the distribution of family earnings. Recently there had been an influx of wives in the labor force whose husbands had incomes in the upper middle and upper ranges. The author tests whether this recent phenomenon had caused a trend towards inequality in the distribution of family earnings, and found that working wives still tend to be an equalizing force in their distribution.

Leibowitz and Arleen (1975) examined the effect of women's education on time spent in the home. Assuming an increased labor force participation and productivity because of an increase in education, the author tried to prove that it would also lead to an increase in home productivity. Her reasoning followed that as the wife's time becomes scarce she turns to more capital-intensive devices which are for convenience. Also, time spent in child care also raised because of what Leibowitz identified as feelings of guilt over devoting so much time to the job.

Rosen and Harvey (1974) posits the argument that current U.S. tax rates penalized white married women who worked to a greater extent than do their husbands or comparable single women. This "marriage tax penalty" was perceived by the wife and was a disincentive to labor force participation. Although the author discovered significant welfare losses because of the high level of marginal taxation on joint returns, he didn't recommended singular taxation of spousal returns. Such a change would lead, Rosen suggested, a shift of the burden of taxes onto the lower income families.

Ryscavage and Paul (1979) analyzed the raise in married women's labor force participation during 1960-77 showed that the greatest gains are attributable to women whose husbands earned incomes in the upper middle or upper ranges. This changed was most significant among women 35 years old and over with school-age children. Approximately 60 percent of the increase in married women's labor force participation occurred among wives whose husbands earned in the upper middle and upper ranges.

Strober and Myra (1977) analyzed the effect of wives' labor force participation on the ratio of consumption to income and durable goods purchases to income. Purchases of durable goods were found to be equivalent for families with and without working wives; however, the consumption to income ratio was higher in families with a working wife. This represented a substitute effect where the wife's time formerly spent in household work was now replaced by expenditures on non-durable time-saving and work-related expenses.

Chapter-3

*Materials and Methods*

### MATERIAL & METHODS

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In this chapter, the procedure used for sampling the respondents, collection of data, analytical tools used to arrive at the results and the general features of the study area was discussed. This chapter was presented under following heads.

3.1 Profile of the study area

3.2 Sampling design

3.3 Nature and sources of data

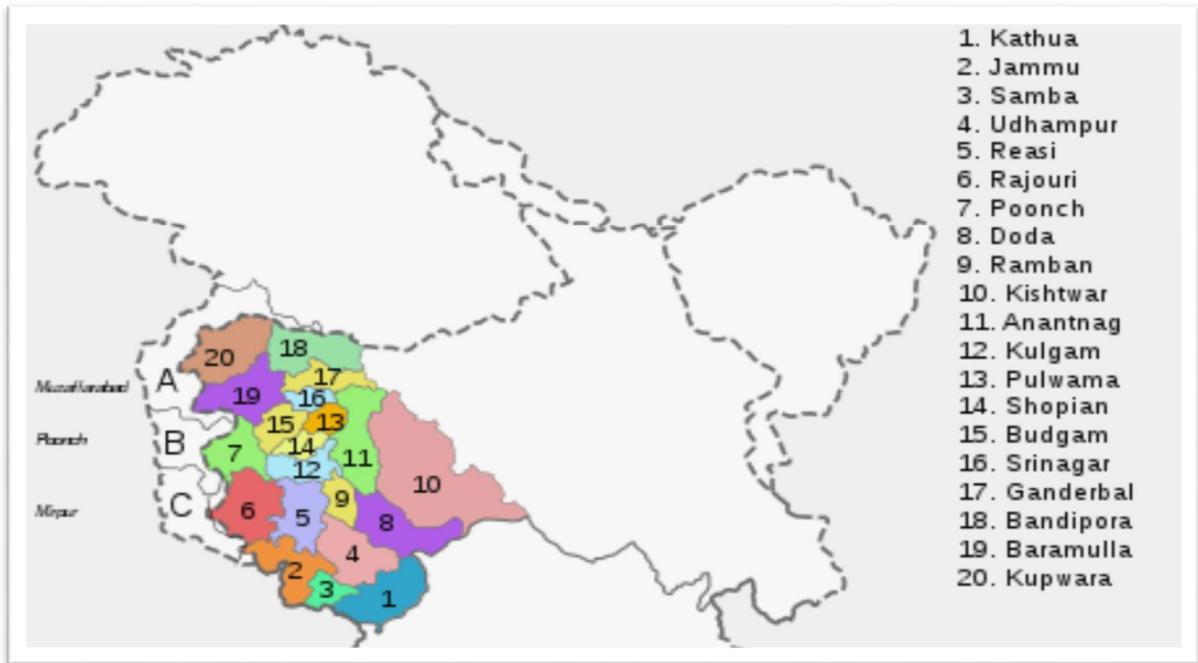
3.4 Period of study

3.5 Method of analysis

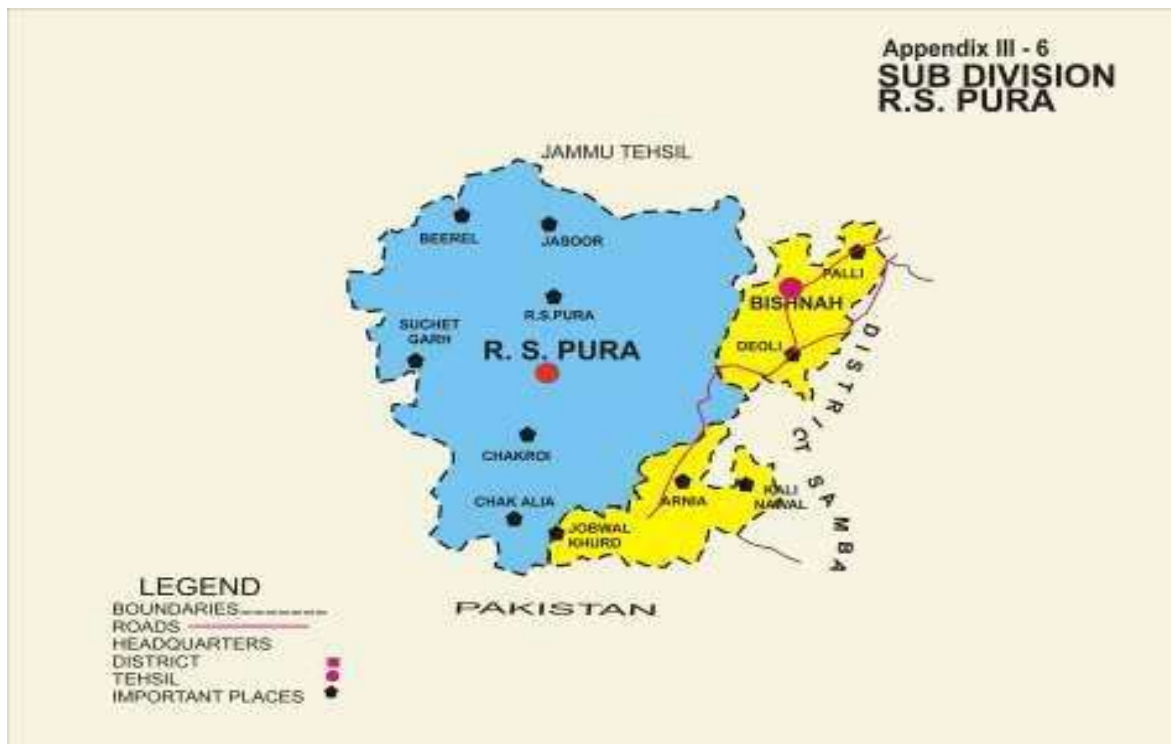
#### **3.1 Profile of the Study Area**

Jammu borders Kashmir Valley to the north, Ladakh to the east, and Punjab and Himachal Pradesh to the south. In the west, the Line of Control separates Jammu from Pakistani-administered Kashmir (known as Azad Kashmir in Pakistan). In between Kashmir Valley to the north and the Daman Koh Plains to the south, the Shivalik Range comprises most of the region of Jammu. The Pir Panjal Range, the Trikuta Hills and the low-lying Tawi River basin add diversity to the terrain of Jammu. The Pir Panjal range separates Jammu from the Kashmir Valley. Jammu region has geographically 8 sub regions Ravi-Tawi Kandi plains, Shiwaliks, Pir Panjal belt, Chenab Valley, Bhaderwah Valley, Gandoh Valley, Paddar Valley and Warwan-Marwah Valley.

The climate of the region varies with altitude. In and around Jammu city, the climate is similar to the nearby Punjab region with hot summers, rainy monsoon, and mildly cold and foggy winters. While Jammu city itself does not experience any snowfall, the higher hills and mountains are snow-capped during the winter. People from all over India come to the Patnitop mountain resort to enjoy the winter snows. The shrine of Vaishno Devi is covered with snow in the winter. The Banihal Pass, which links the Jammu region to the Kashmir region, often experiences closure in the winter months due to extremely heavy snowfall.



**Fig 3.1: Districts in Jammu Region**



**Fig 3.2: Sub-divisional Map of R.S. Pura**

### 3.1.1 Profile of the District

**Jammu** is located at 32.73°N 74.87°E. It has an average elevation of 300 m (980 ft). Jammu city lies at uneven ridges of low heights at the Shivalik hills. It is surrounded by the Shivalik range to the north, east,

and southeast while the Trikuta Range surrounds it in the northwest. It is approximately 600 kilometers (370 mi) from the national capital, New Delhi.

The city spreads around the Tawi river with the old city overlooking it from the north (right bank) while the new neighborhoods spread around the southern side (left bank) of the river. There are five bridges on the river. The city is built on a series of ridges.

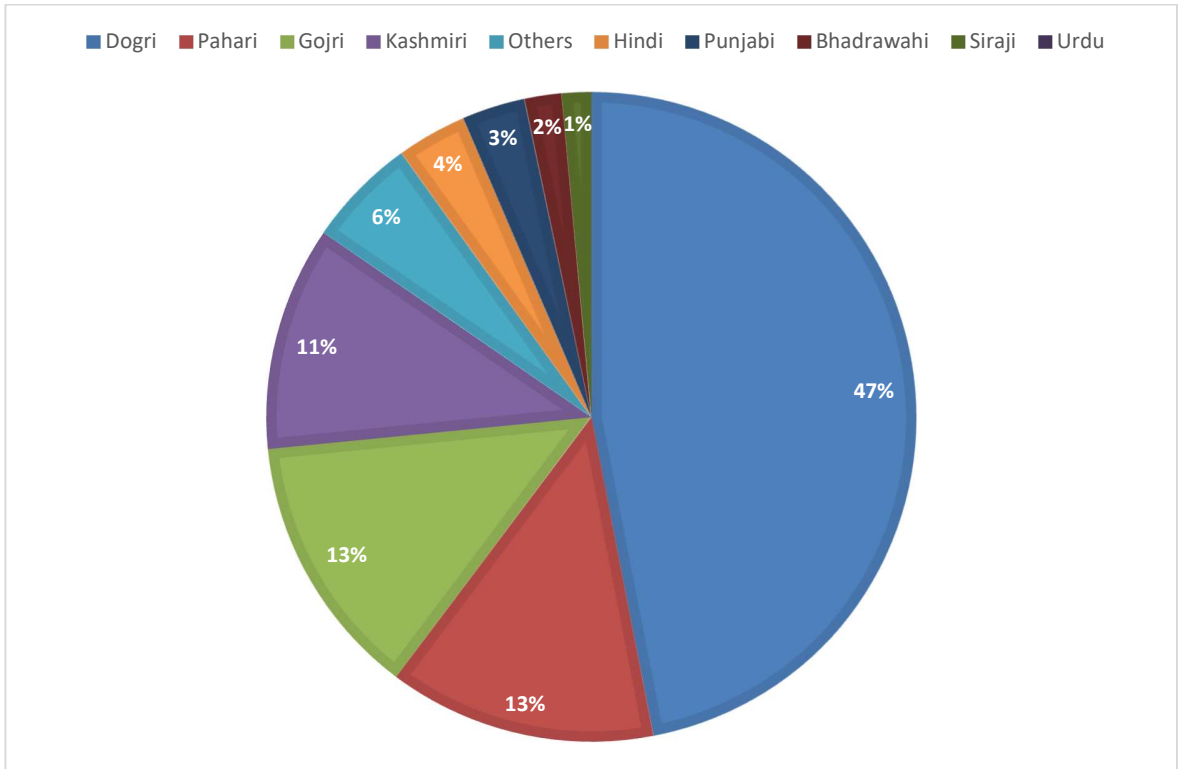
Jammu district is divided into seven (7) sub-divisions as follows:

- Jammu South
- Jammu North
- **R.S. Pura**
- Marh
- Akhnoor
- Chowki Choura
- Khour

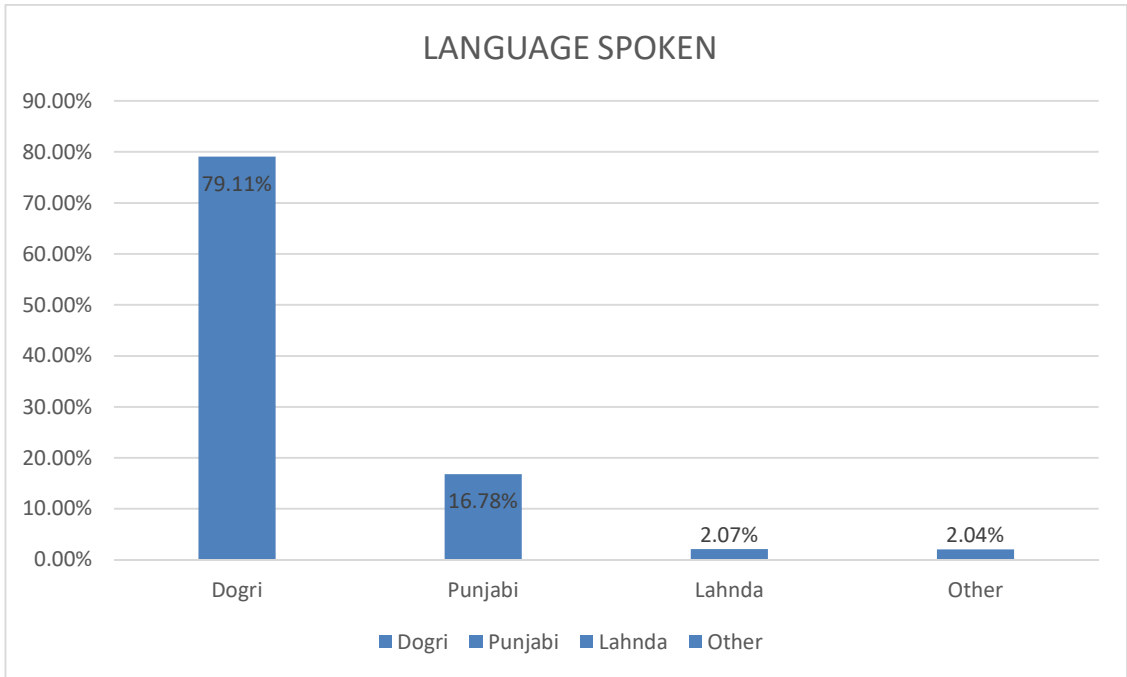
### **3.1.2 Selection of sampling area**

Based on the highest number of beneficiaries Jammu district was selected. Then, based of the highest number of beneficiaries among the sub-divisional areas of Jammu district, R.S. Pura was selected. Named after Dogra Maharaja Ranbir Singh, Ranbir Singh Pura is located at 32.63°N 74.73°E. It has an average elevation of 270 metres (886 feet above sea level). The daily mean temperature in this region is ~6 °C in winter and ~44 °C in summer.

It is nearly 24.5 km towards south from district headquarter Jammu and about 320 km from state capital Srinagar. It is mainly connected though road with the main city. This area has up to date bus service. R.S. Pura is approx. 22 km away from Jammu Tawi Railway Station and nearly 15 km away from the airport. It is located on the Indo-Pak border Suchetgarh which is 33 km away from the district headquarters of Jammu.



**Fig. 3.3: Languages spoken in Jammu Region.**



**Fig. 3.4: Language spoken in Jammu District.**

**Table 3.1: Number of beneficiaries with received installments under PM-KISAN Scheme in Jammu and Kashmir**

Sr. No	District	Total No. of Beneficiaries	Beneficiaries who have received I <sup>st</sup> instalment	Beneficiaries who have received II <sup>nd</sup> instalments	Beneficiaries who have received III <sup>rd</sup> instalments	Beneficiaries who have received IV <sup>th</sup> instalments
1	ANANTNAG	90492	89422	88955	81309	69494
2	BADGAM	87086	87081	81996	77031	75348
3	BANDIPORA	54750	53707	52705	48683	42065
4	BARAMULLA	101465	101198	100022	97169	93568
5	DODA	49918	49751	48674	47361	46210
6	GANDERBAL	29076	28835	27425	26741	25914
7	JAMMU	107853	107525	105566	103225	95950
8	KARGIL	8539	7958	7750	7696	7424
9	KATHUA	68324	67725	66549	65347	64137
10	K ISHTWA R	39923	39241	38694	38045	36163
11	KULGAM	54719	54167	52927	50208	46991
12	KUPWARA	105747	105116	100017	93593	80159
13	LEH LADAKH	5908	5891	5800	5768	5341
14	POONCH	55183	54948	53426	51848	49920
15	PULWAMA	46182	46139	45606	45082	43745
16	RAJAURI	86636	85608	83660	80718	75803
17	RAMBAN	34916	34783	33732	32893	32200
18	REASI	34372	33690	33125	32101	31744
19	SAMBA	30158	30007	29293	28576	27876
20	SHOPIAN	20457	20302	20048	19271	19004
21	SRINAGAR	12115	11756	10363	8885	7775
22	UDHAMPUR	57431	57102	56129	55131	54055
	<b>Grand Total</b>	<b>1181250</b>	<b>1171952</b>	<b>1142462</b>	<b>1096681</b>	<b>1030886</b>

Source: [https://pmkisan.gov.in/rpt\\_beneficiarystatus\\_pub.aspx](https://pmkisan.gov.in/rpt_beneficiarystatus_pub.aspx)

It was a major Tehsil having 194 villages as per 2011 census. Main languages spoken by the people of this area are Punjabi, Dogri, Hindi and Urdu. The main road linking R.S Pura was once the bus route from Jammu to Sialkot (Pakistan) and this route was so popular that there were several inns built on the route by the Maharaja of Jammu and Kashmir.

Suchetgarh (Indo-Pak border) was nearly 35 km from Jammu City and 10.3 km from R.S Pura. This post was set up after first war over Kashmir in 1947-48. Prior to independence there used to be an octroi post for collection of taxes at Suchatgarh. Now it was used as a Border Security Post. Near the vicinity of this post there lie a Prehistoric and Raghunath temple which have their own importance. Within the temple complex there was an old Sarai which was used as a halting place for travelers.

This area has not only historical importance as quoted above but was a land of warriors and heroes like Naib Subedar-Bana Singh recipient of Paramveer Chakra who recaptured the Qaid-e-Aazam post from Pakistan intruders and was now being named as Bana Post. The atmosphere of R.S. Pura was filled with courage and patriotism. Most of the boys of this area has utmost zeal to serve their nation by joining army. Number of soldiers exhibited their bravery in the Kargil war in 1999 such as Lance Naik Devinder Singh and Sepoy Janvir Singh.

### **3.1.3 Demography**

According to the 2011 census, the total population of Jammu Division was 5,350,811. Scheduled castes (Dalits) constitute 19.44% of the population and Scheduled tribes comprise 15-20% of the population in Jammu Division. Out of 10 districts, six of them, mainly in the Chenab Valley and the Pir Panjal region have Muslim majority while Hindus are predominantly based in the Jammu region. Gurjar-Bakarwal and Hindu Gaddi-Sippi communities are also found here. The largest ethnic group in the Jammu Division are the Dogras, who comprise approximately 47% of the population. Jammu's people are closely related to Punjabis.

Jammu Division overall has a Hindu majority population – 62.50% practice Hinduism, 33.50% practice Islam and most of the remainder are Sikhs. The Hindus form a majority in the Jammu, Kathua, Samba and Udhampur districts, and roughly half the population in the Reasi district.[23] Most of Jammu's Hindus are native Dogras, Kashmiri Pandits, Punjabi Hindus migrants and refugees from the Kotli and Mirpur areas which are currently administered by Pakistan. Many Sikhs are migrants from Pakistan-administered Kashmir, mainly from Muzaffarabad and Poonch sector areas annexed by Pakistan in 1947.

In Jammu Division, Dogri was spoken by a majority in the five districts of Jammu, Udhampur, Kathua, Samba and Reasi. Other common languages include Gojri, Pahari, Kashmiri, Hindi, Punjabi and Urdu.

At the time of the 2011 India census, Ranbir Singh Pura had a population of 163567. Males constitute 54% of the population and females 46%. Ranbir Singh Pura has an average literacy rate of 70%, higher than the national average of 59.5%: male literacy was 77%, and female literacy was 63%. In Ranbir Singh Pura, 11% of the population was under 6 years of age.

### **3.1.4 Land utilization pattern**

Total geographical area of the district was 26.29 lakh ha out of which net cropped area was 6.94 lakh

ha and 6.38 lakh ha was under forest coverage.

**Table 3.2: Operational Land holding in Jammu District**

District	No. of holding (000 Nos.)	Area (000 ha)	Average holding size (ha)	Source:
Jammu	140.25	101.75	0.73	

<http://ssdi.jk.gov.in> (2021)

### 3.1.5 Cropping pattern

Crops in the district was chosen based on the amount of rainfall irrigation facilities and soil facility. Major crops grown in the district are rice, maize, wheat, pulses, potato and oilseeds.

## 3.2 Sampling design

### 3.2.1 Selection of study area

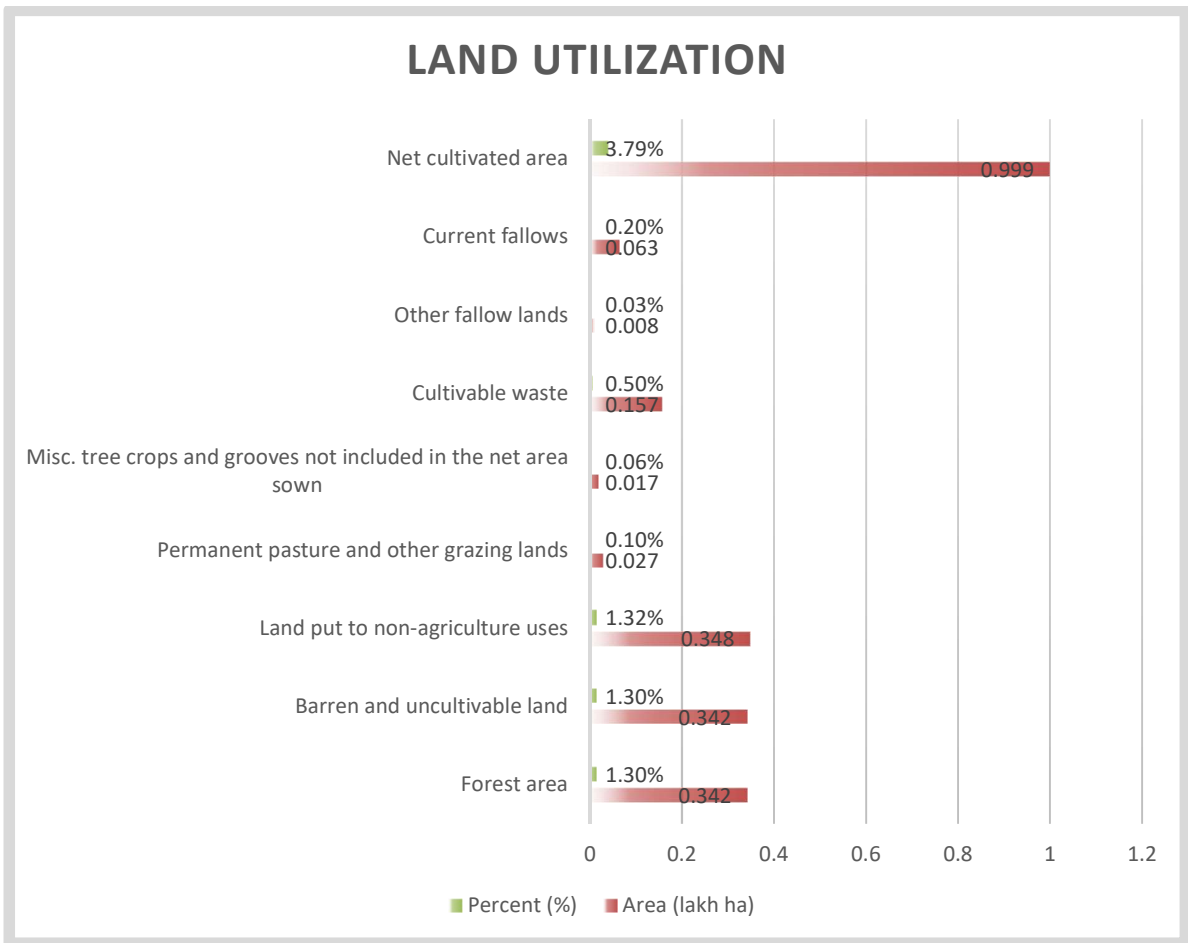
The sampling type for the study would be non-probability sampling under which Jammu district would be purposively selected from Jammu Region of Jammu and Kashmir UT as it has the highest number of beneficiaries enrolled under PM-KISAN Scheme.

**Table 3.3: Distribution of Area under different purposes in Jammu District**

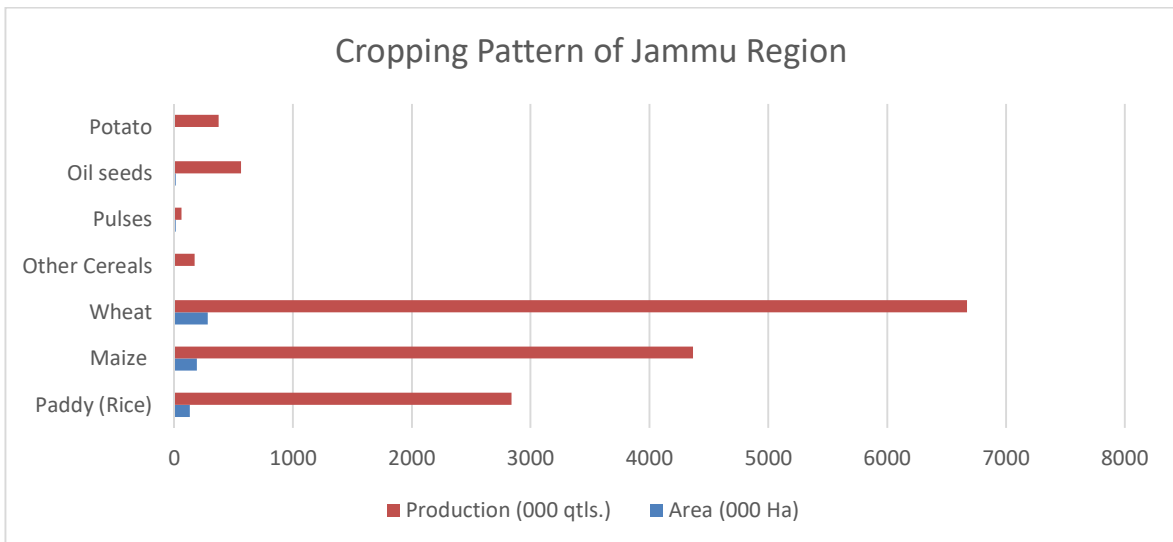
	Particulars	Area (lakh ha)
1	Forest area	0.342 (1.30%)
2	Barren and uncultivable land	0.342 (1.30%)
3	Land put to non-agriculture uses	0.348 (1.32%)
4	Permanent pasture and other grazing lands	0.027 (0.1%)
5	Misc. tree crops and grooves not included in the net area sown	0.017 (0.06%)
6	Cultivable waste	0.157 (0.5%)
7	Other fallow lands	0.008 (0.03%)
8	Current fallows	0.063 (0.2%)
9	Net cultivated area	0.999 (3.79%)
Total geographical area		26.29 (100)
10	Gross cropped area	1.89

Source: <http://ssdi.jk.gov.in> (2021)

*Note:* Figures in parentheses shows percentage to total area.



**Fig. 3.5: Distribution of Area under different purposes in Jammu District.**



**Fig. 3.6: Cropping pattern and production of different crops in Jammu District.**

**Table 3.4: Cropping pattern of Jammu Region**

S. No.	Particulars	Area (000 Ha)	Production (000 qtls.)
1	Paddy (Rice)	131	2839
2	Maize	190	4365
3	Wheat	283	6671
4	Other Cereals	-	172
5	Pulses	13.8	62
6	Oil seeds	13.5	564
7	Potato	-	376

**Source:** Annual report-2019, Department of Agriculture, Jammu.

Jammu district is sub divided into 7 Sub-division. Out of which R.S. Pura sub-division was selected for the present study as it has the highest number of beneficiaries among all the sub-divisions of the selected district. Under R.S. Pura sub-division two blocks i.e. R.S. Pura and Miran Sahib was be selected purposively as maximum number of beneficiaries in this sub-division are registered in these two blocks.

### 3.2.2 Selection of beneficiaries

For selection of beneficiaries, multistage stratified random sampling technique was used. At first stage, a list of villages falling in each block was prepared and 5 villages from each block was selected randomly. At the second stage, for every selected village, two separate lists of farmers, one of beneficiaries and other of non-beneficiaries falling in the selected village was prepared and 6 farmers from each list was be selected randomly. The ultimate sample was consist of 120 respondents out of which 60 respondents was from among the beneficiaries and 60 from the non-beneficiaries.

### 3.2.3 Nature and sources of data

To accomplish the objectives of this study, the relevant data was be collected from both primary and secondary sources.

The primary data was collected with the help of schedules and/or questionnaires. Data was prepared by response received for the beneficiaries and non-beneficiaries of the PM-KISAN Scheme. The structured schedule of questions was cover the information such as utilization of funds for productive and non-productive activities, increase in the expense on agricultural inputs, increase in the production of crops, timing of funds received, new start-up or enterprises under taken, increase in the expense on health and education and ultimately increase in the overall income due to investment of the funds received from PM-KISAN. The questionnaires was be prepared to collect the information from the farmers who have received and also those who have not received the funds under PM-KISAN Scheme.

The secondary data was be collected from following to get the details such as list of beneficiaries, budget allocated for the scheme, number of installments and total amount received under the scheme, criteria for the selection of farmers, number of small and marginal farmers eligible for scheme, etc.

- Annual reports and circulars of PM-KISAN by GoI,
- Office record of R.S. Pura and Miran Sahib block offices,
- Economic Survey of India and PIB,
- Report on Union Budget of GoI,
- Other available library resources & Government website such as <http://pmkisan.gov.in>

### 3.3 Method of analysis of data

By seeing the behavior of the collected data, following economic and statistical tools was used to analyze the data in order to achieve the objectives of study.

#### Method of analysis of data:

Following tools was used for analysis of data:

The way descriptive analysis is done is to start simple; analyze one variable at a time (Univariate Analysis). Then proceed to check the association/relation between two or more variables (Bivariate and Multivariate Analysis).

Tabular Methods are used to summarize the data in table form. It is a systematic organization of information in grid row and columnar structure. The most frequently used tabular format for data summarization is Frequency table and Cross-tabulation.

Graphical Methods are a visual way of presenting data using charts and graphs. The visuals make the data intuitive and self-understandable. The most frequently used visual representation of data are Bar Plot, Histogram, Pareto Chart, Box Plot, Pie Chart, Line Plot, and Scatter Plot.

#### Wilcoxon test:

In the objective of distribution of funds towards various expenses, Wilcoxon rank sum test was used to test the hypothesis and significance of the primary data. Wilcoxon rank sum test is a non-parametric test, this test was selected because requirements for parametric tests were not fulfilled. Wilcoxon rank sum test was calculated in R software. The null hypothesis stated that there was a significant difference between distribution of funds to agricultural and non-agricultural purposes. It was found that the utilization of funds to agricultural purposes was more than for non-agricultural purposes.

$$Z = \frac{R_1 - n_1(n + 1)/2}{\sqrt{n_1 n_2 V_R/n}}$$

Where

$R_1$  is the sum of the ranks from group 1

$n_1$  is the sample size of group 1

$n_2$  is the sample size of group 2

$V_R$  is the variance of the ranks

### **Kruskal–Wallis one-way analysis of variance:**

The Kruskal-Wallis test by ranks, Kruskal-Wallis H test (named after William Kruskal and W. Allen Wallis), or one-way ANOVA on ranks is a non-parametric method for testing whether samples originate from the same distribution. It is used for comparing two or more independent samples of equal or different sample sizes. It extends the Mann–Whitney U test, which is used for comparing only two groups. The parametric equivalent of the Kruskal-Wallis test is the one-way analysis of variance (ANOVA).

Since it is a nonparametric method, the Kruskal-Wallis test does not assume a normal distribution of the residuals, unlike the analogous one-way analysis of variance. If the researcher can make the assumptions of an identically shaped and scaled distribution for all groups, except for any difference in medians, then the null hypothesis is that the medians of all groups are equal, and the alternative hypothesis is that at least one population median of one group is different from the population median of at least one other group.

The test statistic is given by: ( $H$ )

$$H = \frac{12}{N(N+1)} \left( \sum \frac{R_i^2}{n_i} \right) - 3(N + 1) \text{ where,}$$

$n_i$  = the total number of points in the  $i^{\text{th}}$  sample

$R_i$  = the rank sums the  $i^{\text{th}}$  sample

$N$  = the total number of sample points

Descriptive statistics applied in the present analysis can broadly be categorized into measures of central tendency (CT), measures of dispersion and measures of association-ship. Among these, the arithmetic mean, the standard deviation/error, skewness, kurtosis, maximum, minimum, SGAR percentage etc. are widely used to describe the given data for their obvious merits over other hosts of measures.

**Jarque-Bera test:** In statistics, the Jarque–Bera test is a goodness-of-fit test of whether sample data have the skewness and kurtosis matching a normal distribution. The test is named after Carlos Jarque and Anil K. Bera. The test statistic JB is defined as

$$JB = \frac{n - k + 1}{6} \left( S^2 + \frac{(C - 3)^2}{4} \right)$$

Where;

$n$  is the number of observations (or degrees of freedom in general);

$S$  is the sample skewness,

$C$  is the sample kurtosis, and  $k$  is the number of regressors.

The Jarque-Bera test has chi-square distribution with two degrees of freedom for large sample and can be used to test the null hypothesis that the data is from normal distribution.  $(JB \sim \chi^2)$

### Percentage Change:

$$\% \text{ change} = \frac{A - B}{B} \times 100$$

Where; A = change in value after implementation of scheme

B = value before implementation of scheme

Various factors that influence the consumption pattern or behavioral change in consumption are considered as variables that are to be tested for significance. These are categorized as dependent and independent variables. Dependent and independent variables are those variables that are frequently used in mathematical modelling, statistical modelling and experimental sciences.

- **Independent variable** is the cause. Its value is *independent* of other variables in your study.
- **Dependent variable** is the effect. Its value *depends* on changes in the independent variable.

### Testing for significance of factors for analysis:

**CHI-SQUARED TEST:** (also written as  $\chi^2$  test) is a statistical hypothesis test that is valid to perform when the test statistic is chi-squared distributed under the null hypothesis, specifically Pearson's chi-squared test and variants thereof. Pearson's chi-squared test is used to determine whether there is a statistically significant difference between the expected frequencies and the observed frequencies in one or more categories of a contingency table.

$$\chi^2 = \sum \frac{(O_i - E_i)^2}{E_i}$$

$\chi^2$  = chi-squared

$E_i$  = observed value

$O_i$  = expected value

### Garrett Ranking Technique

Garrett technique was adopted for the studying brand preferences and factors influencing for preferences of a particular brand.

**Percentage position =  $100(R_{ij} - 0.5)/n$**

Where; R is the rank; N=Number of items.

## Chapter-4

# *Results*

### RESULTS

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According to the objectives of the study, the required data was collected, analyzed and interpreted. Results in this chapter are discussed under following sub-heads.

- 4.1 Distribution and consumption of funds utilized from PM-KISAN Scheme.
- 4.2 Change in consumption pattern after implementation of PM-KISAN Scheme.
- 4.3 Variables and constraints influencing the consumption pattern of funds under PM-KISAN Scheme.

#### **4.1 Distribution and consumption of funds utilized from PM-KISAN Scheme**

Proper utilization of funds intended for agriculture plays a crucial role in the production and development of farmers. The present study conducted to know the proportion of funds utilized for agricultural purposes and diversion of funds to non-agricultural purpose if any, by the sample farmers.

From table 4.1, It was evident the amount of funds utilized for different purposes. It was observed from the table that the funds utilized for agricultural purposes was 95.94 per cent and for non-agricultural purposes was 4.05 per cent.

According to category of farmers it was observed that, marginal farmers utilized 92.37 per cent of amount for agricultural purpose and 7.63 per cent for non-agricultural purposes. Small farmers used 94.07 per cent of amount for agricultural purpose and 5.93 per cent for non- agricultural purpose and in case of semi-medium farmers it was 95.63 per cent for agricultural purpose and 4.37 per cent for non-agricultural purpose.

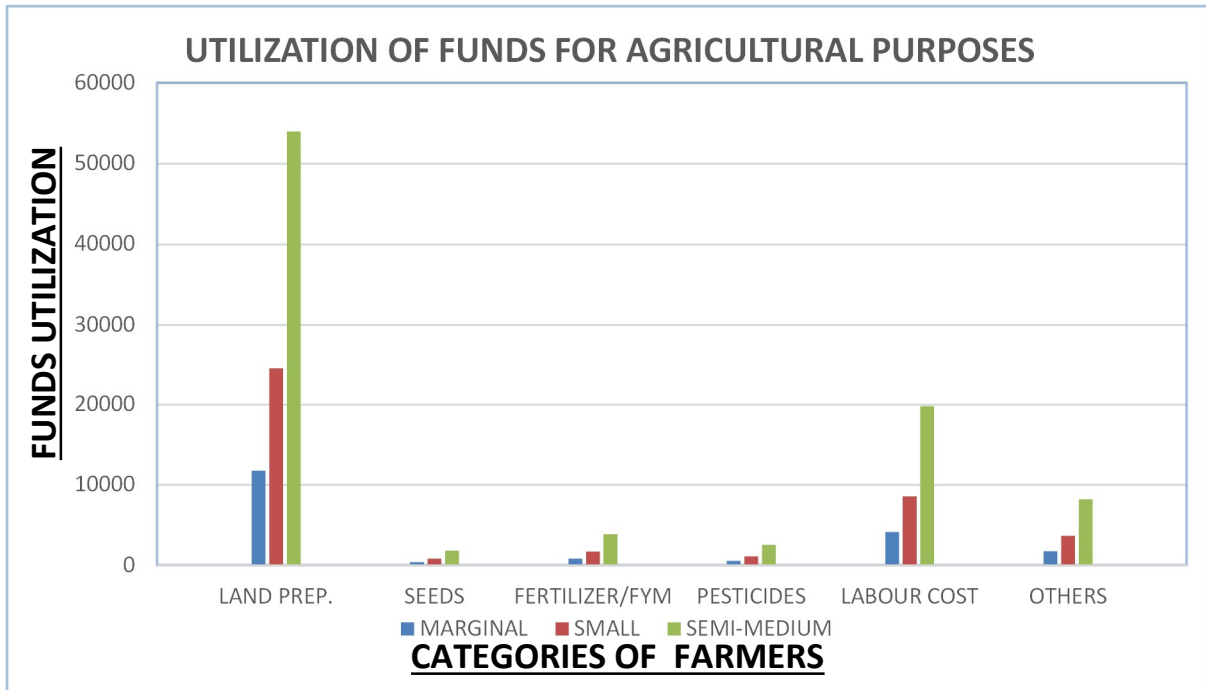
From table 4.1, it was evident that the sample respondents utilized 20.83 per cent for labour cost, 57.64 per cent for land preparation, 1.95 per cent for seed, and 4.10 per cent for fertilizers and 2.71 per cent for pesticides. It was observed from the table that the highest amount of 70.72 per cent of funds diverted to consumption purposes, 15.15 per cent of funds spent on education, 3.55 per cent percent for social ceremonies, 1.63 per cent percent for medical expenses and 8.95 per cent of funds used for other purposes. It was understood from the study that no farmer saved the scheme amount for future use.

**Table 4.1: Utilization of fund in categories of farmers for agriculture and non-agriculture purposes.**

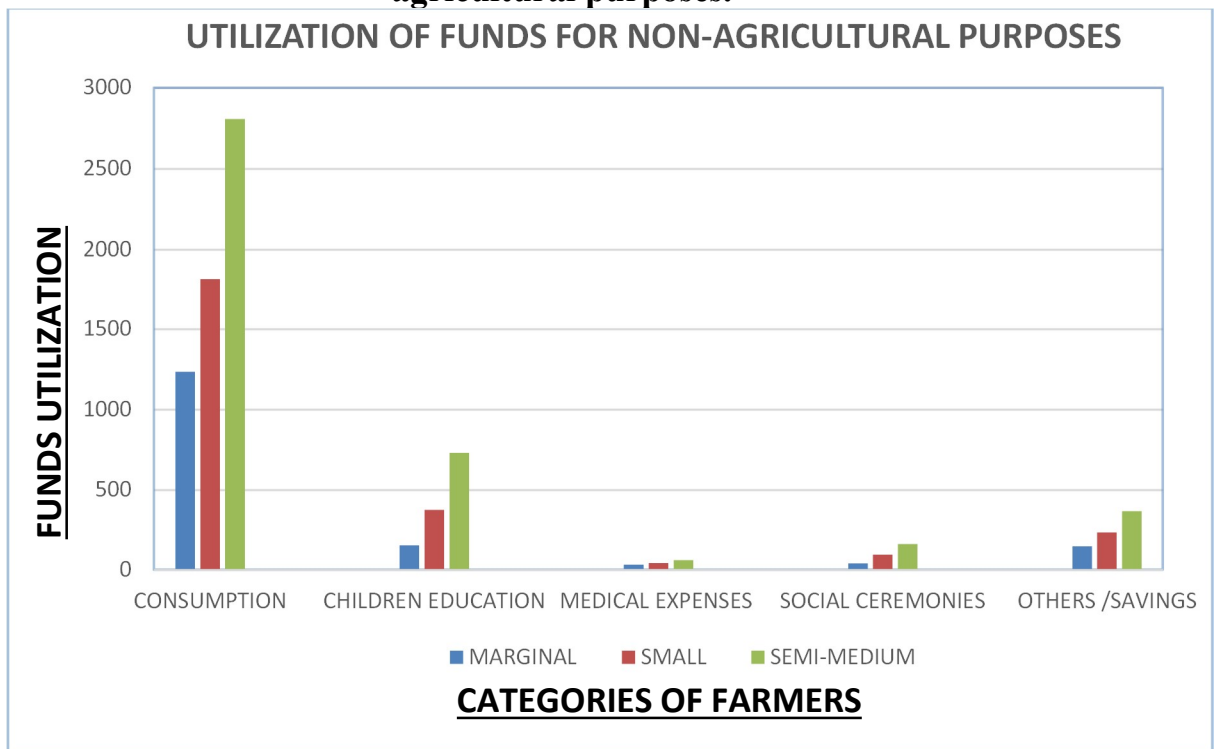
Purpose	Categories Of Farmers			Overall Average
	Marginal	Small	Semi-Medium	
<b>Agricultural Purpose</b>				
Land Prep.	11772.97	24500.00	54000.00	<b>39250.00</b>
	<b>(60.51)</b>	<b>(60.62)</b>	<b>(59.82)</b>	<b>(60.07)</b>
Seeds	397.33	826.87	1822.50	<b>1324.68</b>
	<b>(2.04)</b>	<b>(2.05)</b>	<b>(2.02)</b>	<b>(2.027)</b>
Fertilizer/FYM	821.16	1708.87	3869.00	<b>2788.93</b>
	<b>(4.22)</b>	<b>(4.23)</b>	<b>(4.29)</b>	<b>(4.27)</b>
Pesticides	547.35	1125.31	2566.25	<b>1845.78</b>
	<b>(2.81)</b>	<b>(2.78)</b>	<b>(2.84)</b>	<b>(2.83)</b>
Labour Cost	4147.02	8575.00	19800.00	<b>14187.50</b>
	<b>(21.32)</b>	<b>(21.22)</b>	<b>(21.94)</b>	<b>(21.71)</b>
Others	1768.58	3673.60	8205.77	<b>5939.69</b>
	<b>(9.09)</b>	<b>(9.09)</b>	<b>(9.09)</b>	<b>(9.09)</b>
<b>Sub-Total Expenses</b>	<b>19454.44</b>	<b>40409.66</b>	<b>90263.52</b>	<b>65336.59</b>
	<b>(100)</b>	<b>(100)</b>	<b>(100)</b>	<b>(100)</b>
<b>Non-Agricultural Purpose</b>				
Consumption	1235.62	1809.84	2808.03	<b>1951.16</b>
	<b>(76.89)</b>	<b>(71.09)</b>	<b>(68.09)</b>	<b>(70.72)</b>
Children Education	152.67	369.93	731.51	<b>418.03</b>
	<b>(9.50)</b>	<b>(14.53)</b>	<b>(17.74)</b>	<b>(15.15)</b>
Medical Expenses	32.12	41.47	60.91	<b>44.83</b>
	<b>(2.00)</b>	<b>(1.63)</b>	<b>(1.48)</b>	<b>(1.62)</b>
Social Ceremonies	40.34	93.15	160.29	<b>97.93</b>
	<b>(2.51)</b>	<b>(3.66)</b>	<b>(3.89)</b>	<b>(3.55)</b>
Others /Savings	146.08	231.43	363.07	<b>246.86</b>
	<b>(9.09)</b>	<b>(9.09)</b>	<b>(8.80)</b>	<b>(8.95)</b>
<b>Sub-Total Expenses</b>	<b>1607.00</b>	<b>2546.00</b>	<b>4124.00</b>	<b>2759.00</b>
	<b>(100)</b>	<b>(100)</b>	<b>(100)</b>	<b>(100)</b>
<b>Total</b>	<b>21061.44</b>	<b>42955.66</b>	<b>94387.52</b>	<b>68095.59</b>

*Note:* Figures in parentheses shows percentage of total funds utilized.

**Fig. 4.1: Distribution of funds among categories of farmers for**



**agricultural purposes.**



**Fig. 4.2: Distribution of funds among categories of farmers for non-agricultural purposes**

Overall, it could be said that out of the total funds. Funds utilized for agricultural purpose accounts to 95.95 per cent and for non-agricultural purpose it was 4.05 per cent. These finding are similar with Baba S.H. (2015) in Jammu and Kashmir and Ujjwala B. (2020) in Ranga-reddy district of Telangana.

By Using Wilcoxon Sign-rank Test, it was found that overall priority was given to agricultural purposes while utilizing fund. Thus could be said that utilization of funds to agricultural purposes was more than for non-agricultural purposes. The obtained P-value was 0.008811 (*Hypothesis P-value < 0.05*).

**Table 4.2: Wilcoxon Signed-ranked test for distribution of funds according to different purposes**

Observation	Rank		
<b>Agricultural Purposes</b>			
Land Prep.	1 <sup>st</sup>		
Seeds	7 <sup>th</sup>		
Fertilizer/FYM	4 <sup>th</sup>	<b>N1=</b>	<b>5</b>
Pesticides	6 <sup>th</sup>	<b>N2=</b>	<b>6</b>
Labour Cost	2 <sup>nd</sup>	<b>Sum=</b>	<b>43</b>
Others	3 <sup>rd</sup>	<b>Expected=</b>	<b>30</b>
<b>Non-Agricultural Purposes</b>		<b>G=</b>	<b>5.477226</b>
Consumption	5 <sup>th</sup>	<b>Stat=</b>	<b>2.373464</b>
Children Education	8 <sup>th</sup>	<b>P-Value=</b>	<b>0.008811</b>
Medical Expenses	11 <sup>th</sup>		
Social Ceremonies	10 <sup>th</sup>		
Others /Savings	9 <sup>th</sup>		

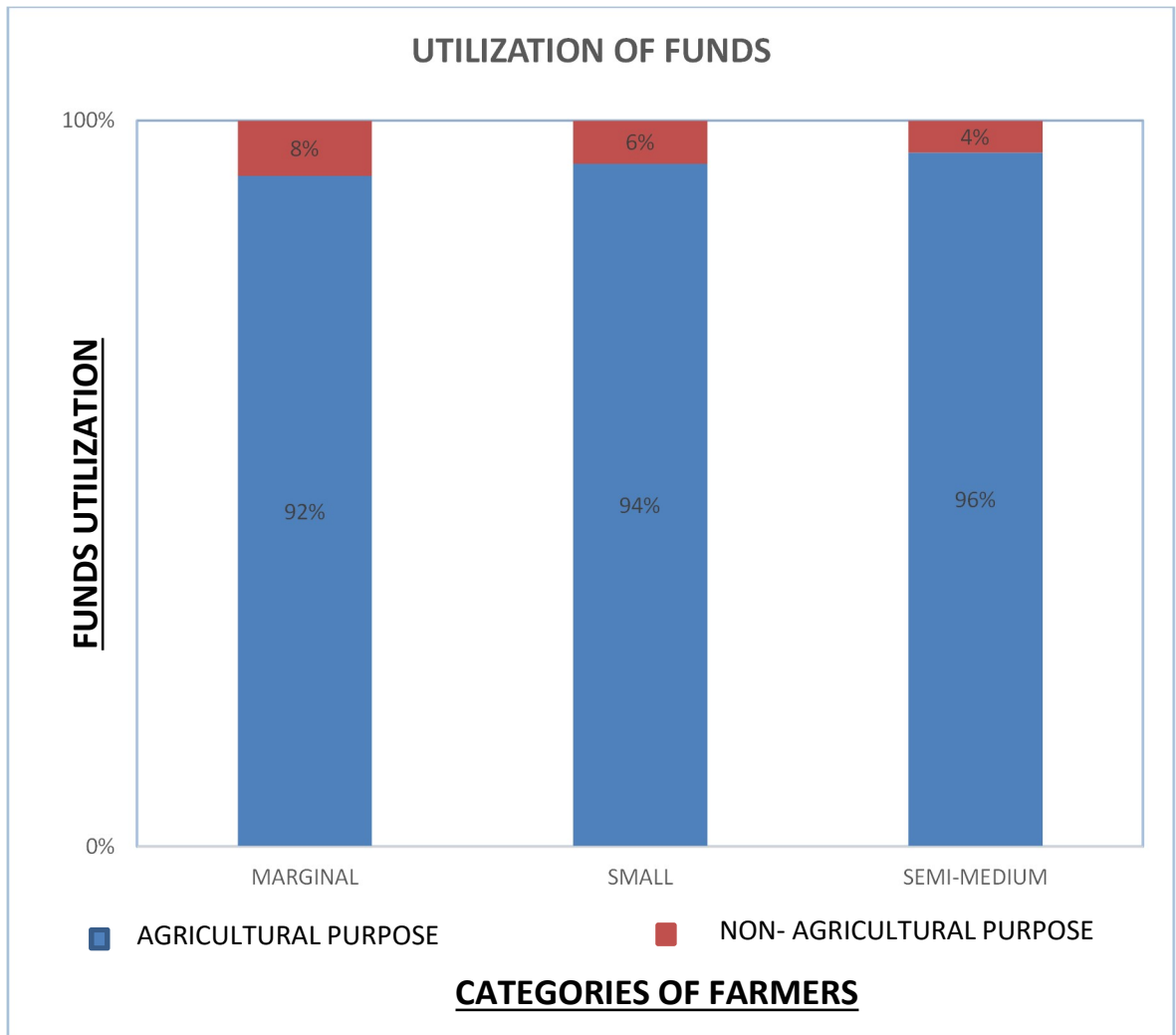
Also through applying Kruskal-Wallis test; it was found that the distribution of different categories of farmers across categories of parameters was same (*Hypothesis P-Value = .440*).

#### **4.2 Change in consumption pattern after implementation of PM-KISAN scheme.**

Change in consumption pattern of beneficiaries indicates the trend of demand for various inputs utilized for the production of field crops. As local paddy was pronounced as major crop in R.S Pura Sub-divisional area; we have considered the change in the consumption of inputs for its production before and after implementation of the Scheme.

**Table 4.3: Representation of results of Kruskal-Wallis Test for distribution of different categories of farmers across categories of parameter**

Hypothesis Test Summary				
	Null Hypothesis	Test	Sig. <sup>a,b</sup>	Decision
1	The distribution of Marginal was the same across categories of Parameters.	Independent-Samples Kruskal-Wallis Test	0.440	Retain the null hypothesis.
2	The distribution of Small was the same across categories of Parameters.	Independent-Samples Kruskal-Wallis Test	0.440	Retain the null hypothesis.
3	The distribution of Semi-Medium was the same across categories of Parameters.	Independent-Samples Kruskal-Wallis Test	0.440	Retain the null hypothesis.
a. The significance level is .050.				
b. Asymptotic significance is displayed.				



**Fig. 4.3: Distribution of funds among categories of farmers for agricultural purposes & non-purposes.**

Through this analysis we would be able to conclude whether or not there has been a significant increase in the demand of various agriculture input after utilization of additional funds via PM-KISAN.

For the detection of Normality in the data obtained through survey, Jarque-Bera test was applied. We found data was non-normal ( $p\text{-Value} = 7.88051E-32$ ), which restricts us to apply only non-parametric test. Therefore, Logarithmic transformation for data conversion was used to obtain Normality in data. Obtained results are shown in Table 4.4.

As could be seen above that Sig. Value  $> 0.05$  (Critical Level), it could be said that null hypothesis which assumes that given set of data was normally distributed; was accepted. Thus we could apply all the parametric test to satisfy the objective.

**Table 4.4: Result of Normality test of descriptive data for various inputs during year 2018-19 and 2020-21.**

Tests of Normality						
	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	df	Sig.
logDAP2019	0.077	60	0.200*	0.978	60	0.352
logDAP2021	0.082	60	0.200*	0.979	60	0.403
logUrea2019	0.077	60	0.200*	0.978	60	0.352
logUrea2021	0.105	60	0.098	0.977	60	0.302
logpesticide2019	0.077	60	0.200*	0.978	60	0.352
logpesticide2021	0.064	60	0.200*	0.980	60	0.449
logWeedicide2019	0.077	60	0.200*	0.978	60	0.352
logWeedicide2021	0.104	60	0.164	0.975	60	0.261
logDisease2019	0.077	60	0.200*	0.978	60	0.352
logDisease2021	0.110	60	0.067	0.973	60	0.204
logSeedTreat2019	0.077	60	0.200*	0.978	60	0.352
logSeedTreat2021	0.084	60	0.200*	0.978	60	0.365
*. This is a lower bound of the true significance.						
a. Lilliefors Significance Correction						

For the study of change in the consumption of inputs by beneficiaries for the production of local paddy, we derive the percentage change in the consumption of input between year 2018 (i.e. before implementation of PM-KISAN) and year 2021 (i.e. after implementation of PM-KISAN).

Table 4.5: Percentage change in the consumption of inputs by beneficiaries for production of local paddy during year 2018-19 and 2020-21

*(in Rupees/ Household)*

Inputs					Category of farmers consuming inputs in production of local -paddy				Overall average			
	Marginal (< 1 ha)		% Change	Small (1-2 ha)		% Change	Semi-medium (2-4 ha)		% Change			% Change
	2018	2021		2018	2021		2018	2021		2018	2021	
<b>DAP (in kg)</b>	37.47	48.00	28.00	76.67	85.40	11.00	168.75	184.75	9.50	94.30	106.05	<b>12.46</b>
<b>Urea (in kg)</b>	37.47	43.94	17.00	76.67	84.37	10.00	168.75	182.25	8.00	94.30	103.52	<b>9.78</b>
<b>Pesticide (in ml)</b>	60.00	92.80	55.00	122.60	155.80	27.00	270.00	320.00	18.50	150.80	189.4	<b>25.60</b>
<b>Weedicide (in ml)</b>	359.80	534.00	48.00	736.00	936.00	27.00	1620.00	1900	17.00	905.2	1123.4	<b>24.09</b>
<b>Disease control (in ml)</b>	359.80	513.60	43.00	736.00	922.60	25.00	1620.00	1825.00	13.00	905.20	1087.00	<b>20.09</b>
<b>Seed treatment (in gm)</b>	359.71	416.85	16.00	736.00	758.67	3.00	1620.00	1732.50	7.00	905.24	969.34	<b>7.08</b>
<b>TOTAL</b>	<b>473.61</b>	<b>565.8</b>	<b>19.50</b>	<b>969.00</b>	<b>1029.2</b>	<b>6.20</b>	<b>2133.00</b>	<b>2301.75</b>	<b>7.90</b>	<b>1191.89</b>	<b>1298.9</b>	<b>8.98</b>

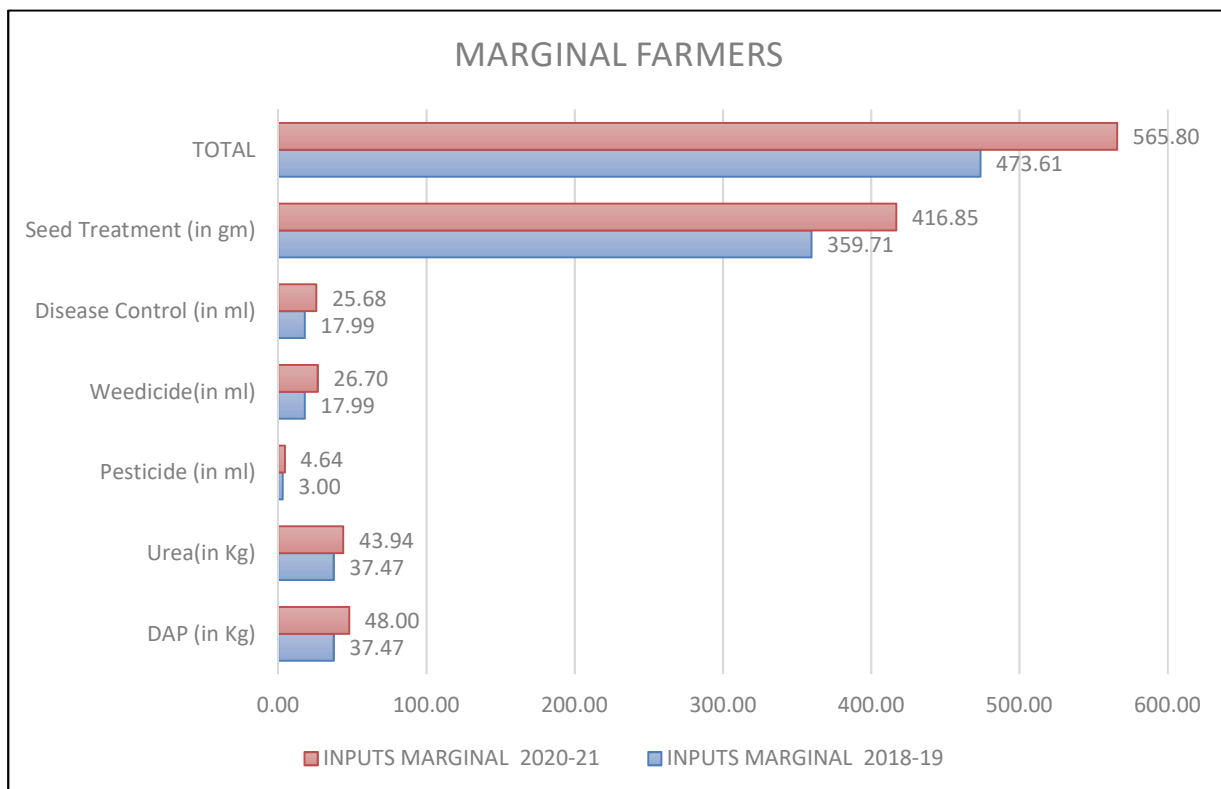
It was observed that the overall percentage change in the consumption of input for the production of local-paddy between 2018 and 2021 was 19.5 per cent for marginal farmers, 6.2 per cent for small farmers and 7.9 per cent for semi-medium farmers.

Percentage change in use of inputs for marginal farmers were DAP (28 per cent), Urea (17 %), Pesticide (55 %), Weedicide (48 %), Disease Control (43 %), and Seed treatment (16 %). Percentage change in use of inputs for small farmers were DAP (11 %), Urea (10 %), Pesticide (27 %), Weedicide (27 %), Disease Control (25 %), and Seed treatment (3 %). Percentage change in use of inputs for semi-medium farmers were DAP (9.5 %), Urea (8 %), Pesticide (18.5 %), Weedicide (17 %), Disease Control (13 %), and Seed treatment (7 %).

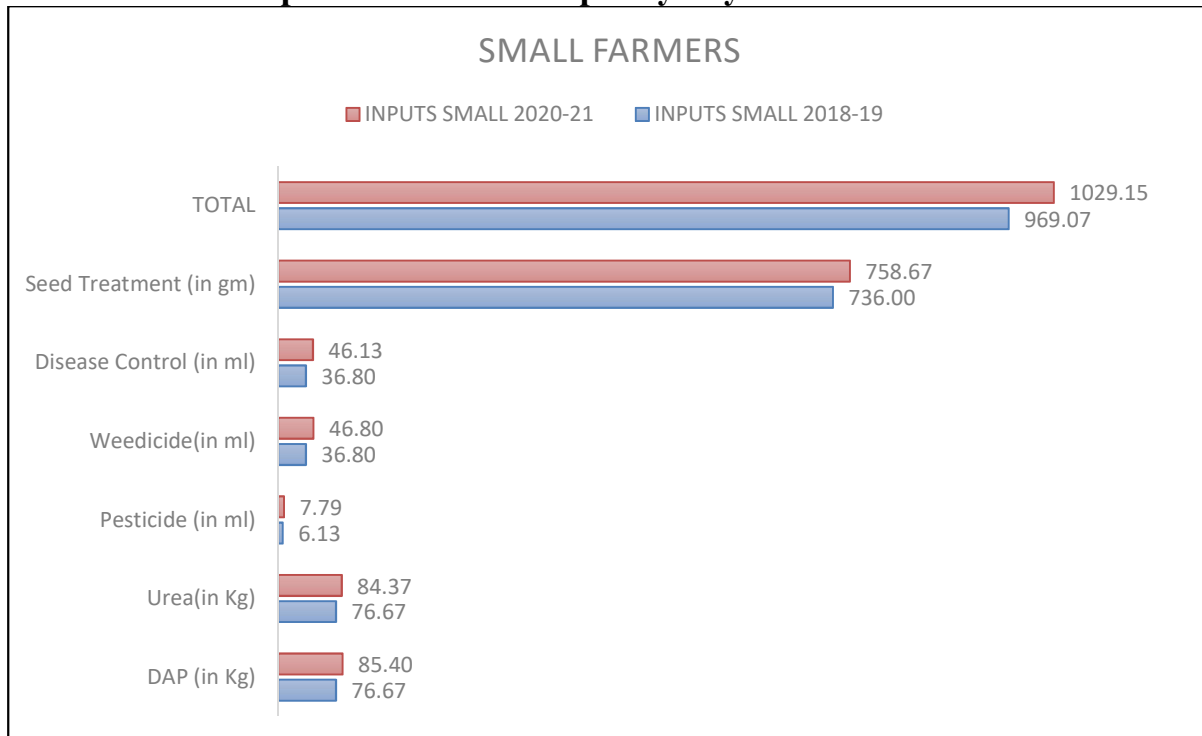
For the study of change in the consumption of inputs by non-beneficiaries for the production of local paddy, we derive the percentage change in the consumption of input between year 2018 (i.e. before implementation of PM-KISAN) and year 2021 (i.e. after implementation of PM-KISAN).

It was observed that the overall percentage change in the consumption of input by non-beneficiaries for the production of local-paddy between 2018 and 2021 was 6.42 per cent for marginal farmers, 1.92 per cent for small farmers and 2.48 per cent for semi-medium farmers.

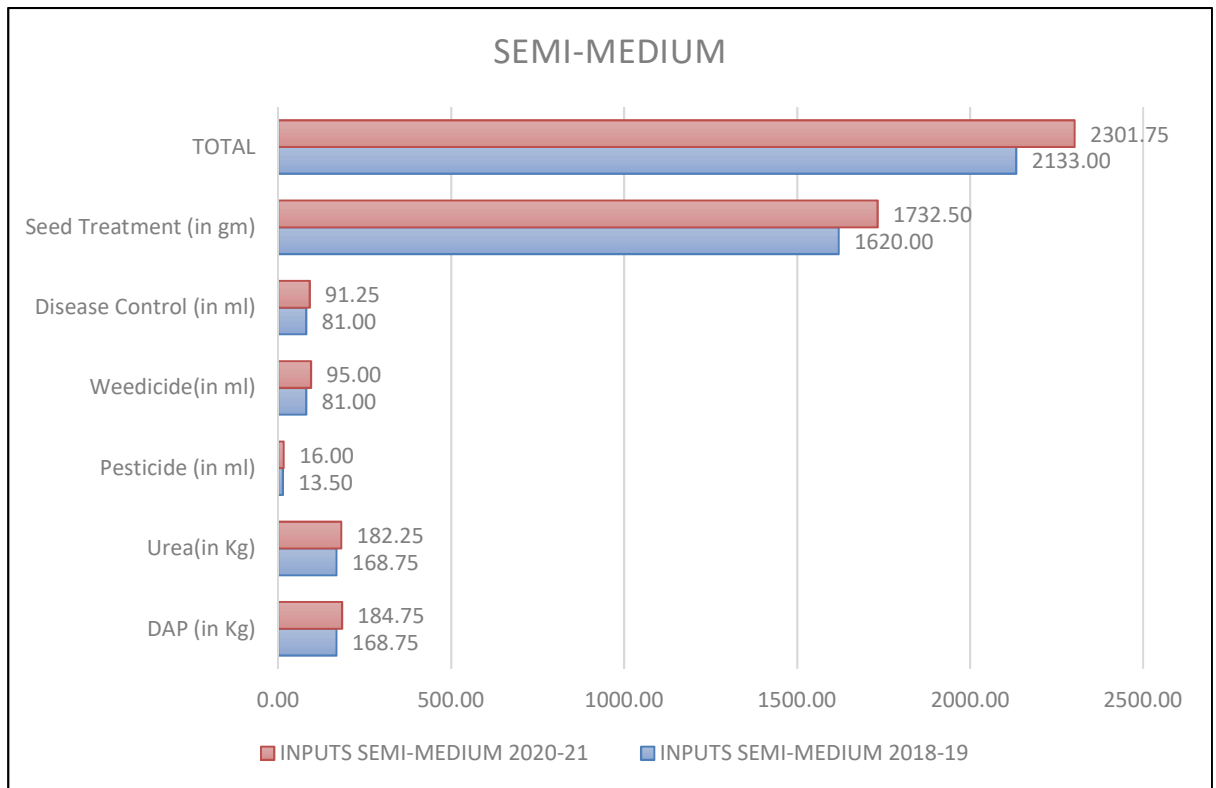
Percentage change in use of inputs for marginal farmers were DAP (5.42 %), Urea (6.75 %), Pesticide (16.76 %), Weedicide (11.2 %), Disease Control (16.76 %), and Seed treatment (5.64 %). Percentage change in use of inputs for small farmers were DAP (3.04 %), Urea (4.35 %), Pesticide (8.91 %), Weedicide (8.7 %), Disease Control (14.13 %), and Seed treatment (0.54 %). Percentage change in use of inputs for semi-medium farmers were DAP (3.70 %), Urea (3.70 %), Pesticide (11.11 %), Weedicide (4.94 %), Disease Control (6.17 %), and Seed treatment (1.85 %).



**Fig. 4.4: Data of change in the mean consumption of inputs in marginal farmers for production of local paddy in year 2018 and 2021.**



**Fig. 4.5: Data of change in the mean consumption of semi-medium farmers for production of local paddy in year 2018 and 2021.**

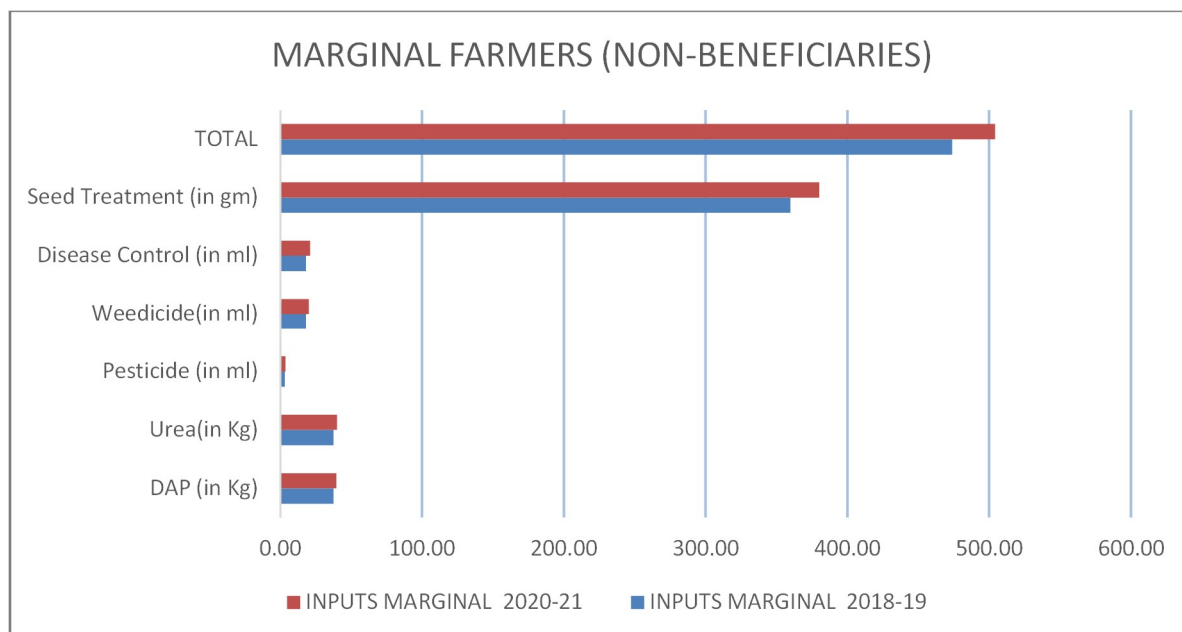


**Fig. 4.6: Data of change in the mean consumption of small farmers for production of local paddy in year 2018 and 2021.**

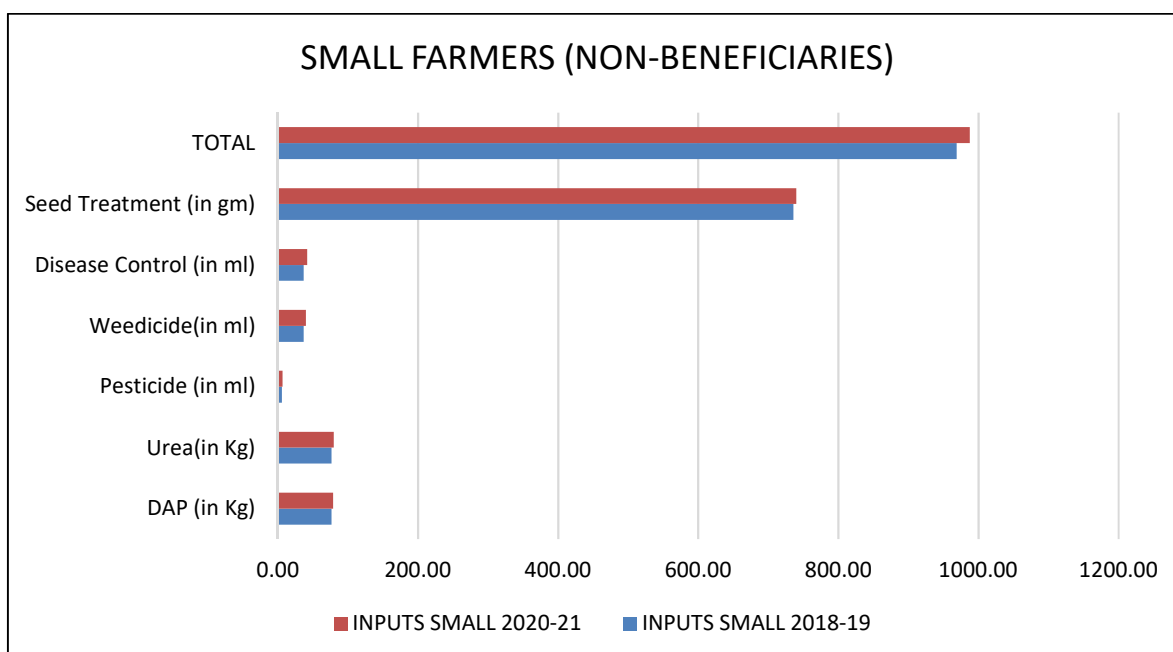
Table 4.6: Percentage change in the consumption of inputs by non-beneficiaries for production of local paddy in 2018 and 2021

*(in Rupees/ Household)*

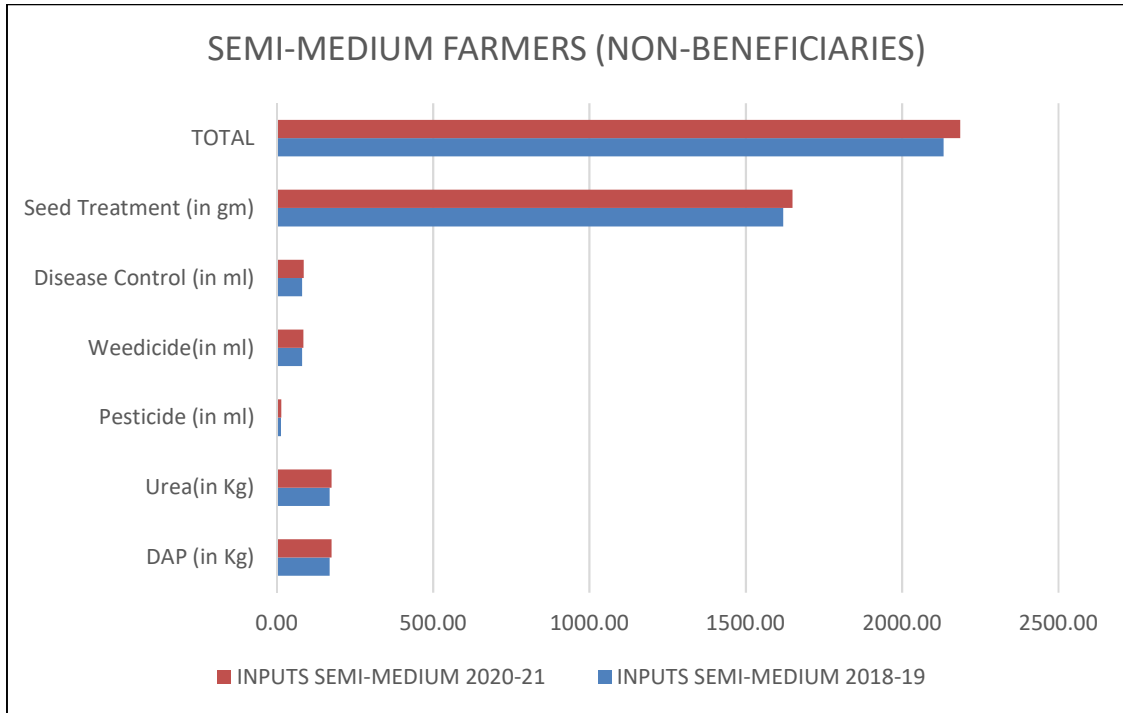
Non-beneficiaries	Category of farmers consuming inputs in production of local-paddy									Overall average		
	Marginal (< 1 ha)		% change	Small (1-2 ha)		% change	Semi-medium (2-4 ha)		% change	Overall average		% change
	2018	2021		2018	2021		2018	2021		2018	2021	
<b>DAP (in kg)</b>	37.47	39.50	5.42	76.67	79	3.04	168.75	175	3.70	94.30	97.83	<b>3.75</b>
<b>Urea (in kg)</b>	37.47	40.00	6.75	76.67	80	4.35	168.75	175	3.70	94.30	98.33	<b>4.28</b>
<b>Pesticide (in ml)</b>	60.00	70.00	16.76	122.60	134.00	8.91	270.00	300.00	11.11	150.80	160.00	<b>6.05</b>
<b>Weedicide (in ml)</b>	359.50	400.00	11.20	736.00	800.00	8.70	1620.00	1700.00	4.94	905.20	940.00	<b>3.84</b>
<b>Disease control (in ml)</b>	359.80	420.00	16.76	736.00	840.00	14.13	1620.00	1720.00	6.17	905.20	960.00	<b>6.05</b>
<b>Seed Treatment (in gm)</b>	359.71	380.00	5.64	736.0	740	0.54	1620.00	1650	1.85	905.24	910.00	<b>0.53</b>
<b>TOTAL</b>	<b>473.61</b>	<b>504.00</b>	6.42	<b>969</b>	<b>987.7</b>	1.92	<b>2133</b>	<b>2186</b>	2.48	<b>1191.89</b>	<b>1209.17</b>	<b>1.45</b>



**Fig. 4.7: Data of change in the mean consumption of inputs by non-beneficiaries in marginal farmers for production of local paddy in year 2018 and 2021.**



**Fig. 4.8: Data of change in the mean consumption of inputs by non-beneficiaries in small farmers for production of local paddy in year 2018 and 2021.**



**Fig. 4.9: Data of change in the mean consumption of inputs by non-beneficiaries in semi-medium farmers for production of local paddy in year 2018 and 2021.**

### 4.3 Variables and constraints influencing the consumption pattern of funds under PM-KISAN scheme.

#### 4.3.1 Variables:

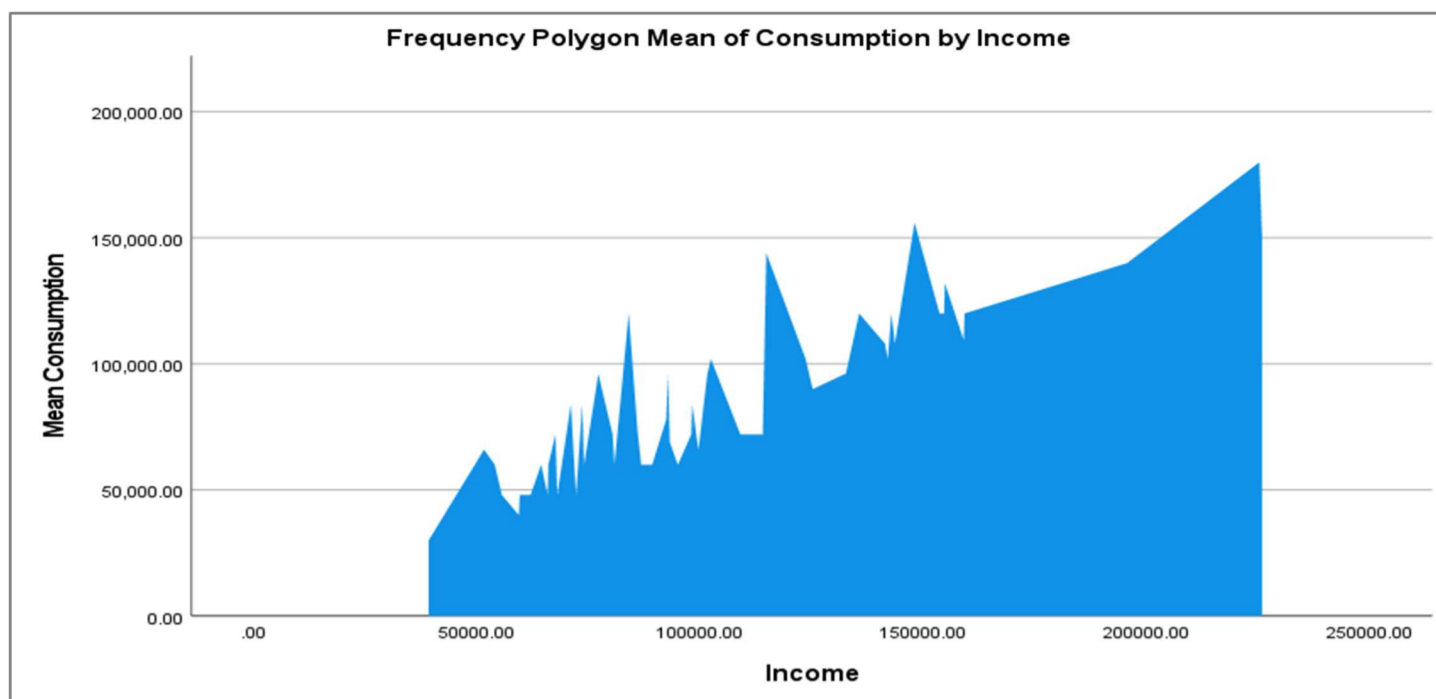
Before considering the impact of other variables on the change in consumption pattern, firstly the change in consumption pattern due to change in income level was testified. Then, further three variables such as gender, education, and number of earners were checked for their significance in change of consumption pattern.

#### 4.3.1.1 Influence of Income level on Consumption :

There was a strong positive correlation (*Pearson's correlation Coefficient,  $r = 0.85$* ) found between income and consumption. This shows that there was a significant impact in Consumption with change in the Income-Level of sampled farmers.

**Table 4.7: Result of correlation test between Income-level and consumption**

Correlation (Confidence Intervals)				
	Pearson Correlation	Sig. (2-tailed)	95 per cent Confidence Intervals (2-tailed) <sup>a</sup>	
			Lower	Upper
Income – Consumption	0.850	0.000	0.761	0.908
a. Estimation is based on Fisher's r-to-z transformation.				



**Fig. 4.10: Frequency Polygon Mean of Consumption by Income.**

#### 4.3.1.2 Influence of Gender on Consumption-Level :

It was to study the influence of gender of the head of family on deciding the overall annual consumption expenditure. Chi-squared test (Non-parametric test) was conducted to analyze the variable for its significance and test whether it's dependent or independent of change in the consumption-level. For this purpose head of the family were grouped into two such as male-head and female-head. It was found that gender was independent and non-significant (as P-value  $>0.05$ ) on deciding the change of consumption for the beneficiaries under PM-KISAN. Therefore, we accept the null hypothesis ( $H_0$ ) that there was no significance between the variables and they are independent.

**Table 4.8: Result of Chi-Square Test between Gender and consumption.**

*(in numbers/ household)*

Gender VS Consumption			
Observed frequency			
Count of Gender	Column Labels		
Row Labels	NO	YES	Grand Total

Female	5	3	8
Male	34	18	52
<b>Grand Total</b>	<b>39</b>	<b>21</b>	<b>60</b>
<b>Expected Frequency</b>			
<b>Count of Gender</b>	<b>Column Labels</b>		
<b>Row Labels</b>	<b>NO</b>	<b>YES</b>	<b>Grand Total</b>
Female	5.2	2.8	8
Male	33.8	18.2	52
<b>Grand Total</b>	<b>39</b>	<b>21</b>	<b>60</b>
<b>Chi-Squared Test</b>			
<b>P-Value =</b>	<b>0.873475144</b>		

#### 4.3.1.3 Influence of Education on Consumption-Level :

It was analyzed that the influence the education-level of head of the member in the annual consumption expenditure. Through Chi-squared test we could test the significance of the education on consumption level of the farmer's benefits through PM-KISAN.

For conducting the test, farmers were divided into four groups according to education-level such as illiterate, Primary-level educated, Secondary-level educated, and Higher-level educated. P-value for the test was found to be less than 0.05(i.e.  $P\text{-value} = 0.00057$ ). Therefore, the null hypothesis could be rejected and alternate hypothesis was accepted which states that education-level and consumption-level were dependent and highly significant.

**Table 4.9: Consumption and different categories of education cross tabulation**

(in numbers/ household)

<b>Education Vs Consumption</b>			
<b>Observed Frequency</b>			
<b>Count Of Education</b>	<b>Column Labels</b>		
<b>Row Labels</b>	<b>No</b>	<b>Yes</b>	<b>Grand Total</b>

Higher	4.00	16.00	20.00
Illiterate	9.00	2.00	11.00
Primary	12.00	3.00	15.00
Secondary	9.00	5.00	14.00
<b>Grand Total</b>	<b>34.00</b>	<b>26.00</b>	<b>60.00</b>
<b>Expected Frequency</b>			
<b>Count Of Education</b>	<b>Column Labels</b>		
<b>Row Labels</b>	<b>No</b>	<b>Yes</b>	<b>Grand Total</b>
Higher	11.33	8.67	20.00
Illiterate	6.23	4.77	11.00
Primary	8.50	6.50	15.00
Secondary	7.93	6.07	14.00
<b>Grand Total</b>	<b>34.00</b>	<b>26.00</b>	<b>60.00</b>
<b>Chi-Squared Test</b>	0.000573519		
<b>P-Value =</b>	<b>0.00057</b>		

**Table 4.10: Results of Chi-Square Test between Education and consumption.***(in numbers/ household)*

		Education				Total
		Higher	Illiterate	Primary	Secondary	
NO	Count	4	9	12	9	34
	Expected Count	11.9	6.2	7.4	8.5	34.0
CONSUME YES	Count	17	2	1	6	26
	Expected Count	9.1	4.8	5.6	6.5	26.0
Total	Count	21	11	13	15	60
	Expected Count	21.0	11.0	13.0	15.0	60.0

**4.3.1.4 Influence of Number of Earners on Consumption-level:**

To testify the influence of the number of earners on annual consumption expenditure, Chi-squared test was used. In this test mostly the number of earners varied from one to two. Thus only this categories were evaluated against the level of consumption of the family.

As could be seen that the *Pearson chi-square (r)* was *0.0011*, therefore the null hypothesis was rejected and the alternate hypothesis was accepted. Thus, it could be summarized that there was a significant relation between the number of earners and consumption of the farmer's family and they are dependent.

**Table 4.11: Results of Chi-Square Test between Number of Earners and consumption**

(in numbers/ household)

<b>Earners Vs Consumption</b>			
<b>Observed Frequency</b>			
<b>Count Of Earners in Household</b>	<b>Column Labels</b>		
<b>Row Labels</b>	<b>NO</b>	<b>YES</b>	<b>Grand Total</b>
ONE	30	13	43
TWO	4	13	17
<b>Grand Total</b>	<b>34</b>	<b>26</b>	<b>60</b>
<b>Count Of Earners in Household</b>	<b>Column Labels</b>		
<b>Row Labels</b>	<b>NO</b>	<b>YES</b>	<b>Grand Total</b>
ONE	24.367	18.63	43
TWO	9.6333	7.367	17
<b>Grand Total</b>	<b>34</b>	<b>26</b>	<b>60</b>
<b>Chi-Squared Test</b>	0.0011		
<b>P-Value =</b>	<b>0.0011</b>		

#### 4.3.2 Constraints that affect in the implementation of PM-KISAN :

To analyze the constraints in the implementation of PM-KISAN in the grassroots i.e. village-level; Garret-Ranking Technique was used. Following table analyze the scores obtained by the performance of various department in surveyed villages for the implementation of the Scheme.

**Table 4.12: Representation of marks assigned to different department according to garret scores**

Villages	Marks assigned to different department (Garret Score Table)			
	Administration	Bank Employees	Agri. Dept.	Panchayat
Maralia (CT)	108	112	73	132
Kirpind	108	112	73	132
Dhande Kalan (CT)	108	112	73	132
Mehsian	108	132	73	112
Bega	108	112	73	132
Laiyian	108	73	112	132
Chandu Chak	108	73	112	132
Choga	108	112	73	132
Abdulliah	108	112	73	132
Jasour	108	112	73	132
Score (mean)	108	106.2	80.8	130
Rank	2st	3rd	4th	1nd

According to the ranks of the constraints the major problems in each departments in the village-level were identified as follows:

#### 4.3.2.1 Panchayat:

Panchayat has been the grass-root unit of Panchayati-Raj system for implementation of schemes for rural farmers. It has the responsibility to coordinate and aware those farmers who are under their area of jurisdiction about various scheme. Although it has been ranked first which suggests that they needs to improve their efficiency. Some of the lacking that were found in the level were lack of funds to run Panchayat office and less exposure to Panchayat-Raj

system (as it has recently been introduced after the formation of Union territory). Therefore, more exposure activities and funds are needed to be provided (especially in the BOP areas) to improve their efficiency.

#### **4.3.2.2 Administration:**

It could be seen that administration was ranked second out of the other constraints as testified through Garret-ranking technique. This could be due to various reasons that we also came across while ground survey. The implementation of PM-KISAN has categorically implemented through this department on a stage-process basis. Administration bears the responsibility to verify the documents of farmers that fall under the criteria of eligibility to be a beneficiary. The main reason behind it being the first ranked as constraint in implementation could be due to the distance of villages such as Laiyian, Chandu Chak, Choga, Bega and Abdulliah which fall under Border Observation Post (B.O.P) in R.S. Pura Sector. These areas have less access to administrative facilities and frequent visit of staffs. Other reasons could be coordination and awareness among staff and farmers regarding the scheme and completion of KYC details.

#### **4.3.2.3 Bank employees & Staff:**

Banking system in rural and village areas are the financial backbone for the farmers. They could be contributed for removing informal credit system at high rate such from moneylenders and commission agents. Not only have they introduced the concept of saving and investment in rural and village areas but also they could be identified as main reason behind implantation of various insurance and Direct Benefit Transfer (DBT) schemes from the government to the farmers. They have a key importance for implementation and execution of PM-KISAN scheme as the transfer of credit to beneficiary farmers via bank account linked with their aadhar cards. Their behavior and gesture have been professional and friendly towards the farmers. They have been ranked third in the rank of constraints. Thus, there remains some scope on improvement in the coordination and information dissemination regarding the schemes especially on the part of KYC updating and problems regarding crop insurance schemes.

#### **4.3.2.4 Agriculture Department:**

Agriculture department was an executive body that has the responsibility to properly implement and monitor all the schemes and their benefits to the farmers. After the requisites are cleared by the administrative and Panchayat, it was the duty of agriculture department to verify the eligible farmers and recommend them to adhere the benefits. It has been ranked fourth in the rank of constraints as their overall performance has been satisfactory. They have been

reported to participate in the field survey and regular visits on the ground villages and aware them with adequate primary information regarding the scheme. Even in the extremely backward areas (BOP villages); they has been interactive with the local group of farmers. Thus, it could be said that they have been reliable source for implementation and execution of the scheme.

Chapter-5

*Discussion*

## CHAPTER 5

### DISCUSSION

The results of the study have been discussed below in this chapter and presented as followings:

#### 5.1 Distribution and consumption of funds utilized from PM-KISAN Scheme

From the results it could be derived that agricultural purpose dominates the utilization of fund in all the categories of farmers with as total expenditure of ₹ 19454.44 for marginal, ₹ 40409.66 for small and ₹ 90263.52 for the semi-medium farmers. An overall mean expenditure of ₹ 65336.60 for combined all the categories of the farmers. In agricultural purpose, land preparation utilized the maximum expenses i.e., about ₹ 11772.97 (60.51 per cent), ₹ 24500 (60.62 per cent) and ₹ 5400 (59.82 per cent) for marginal, small and semi-medium farmers respectively. Other expenses includes expenditure for seeds, fertilizers/FYM, pesticides, labour cost and other costs that incurred for crop production. Expenditure on seeds were ₹ 397.33, ₹ 826.87 and ₹ 1822.5 for marginal, small and semi-medium farmers respectively which were about 2 per cent of the total cost for agricultural purposes. Less expenditure in seeds evident that seeds are generally used from the previous crop and stored for further usage. Expenditure for fertilizer/FYM are about 4.27 per cent, 4.23 per cent and 4.29 per cent for marginal, small and semi-medium respectively. The overall mean expenditure for fertilizers/FYM are about 4.27 per cent of the total expenditure. Pesticide expenditure was ₹ 547.36, ₹ 1125.31 and ₹ 2566.25 for marginal, small and semi-medium respectively which was about 2.81 per cent, 2.78 per cent and 2.84 per cent of the total expenditure for marginal, small and semi-medium farmers respectively. Labour cost expenses accounts for ₹ 4147.03, ₹ 8575 and ₹ 19800 for marginal, small and semi-medium respectively which were about 21.32 per cent, 21.22 per cent and 21.94 per cent of the total cost for marginal, small and semi-medium farmers respectively. Other expenses for agricultural purposes include machinery, storage and other cost that incurred in agricultural practices.

Non-agricultural purpose includes expenditure for purposes such as consumption, children education, medical expenses, social ceremonies and other expenses such as saving and investments. Consumption expenses had

the maximum share of distribution from the funds that were allocated to the farmers under the scheme. It was ₹ 1235.62, ₹ 1809.85 and ₹ 2808.03 for marginal, small and semi-medium farmers respectively that accounts for 76.89 per cent, 71.09 per cent and 68.09 per cent for marginal, small and semi-medium respectively. An overall mean expenditure of ₹ 418.04 which was about 15.15 per cent of total expenditure for non-agricultural purpose. Medical expenditure was ₹ 32.12, ₹ 41.47 and ₹ 60.91 which was about 2.0 per cent, 1.63 per cent, and 1.48 per cent for marginal, small and semi-medium farmers respectively. For social ceremonies the expenditure was ₹ 40.34, ₹ 93.16 and ₹ 160.91 which was about 2.51 per cent, 3.66 per cent and 3.89 per cent for marginal, small and semi-medium respectively. The other expenditure for non-agricultural purposes including saving and investments were ₹ 146.08, ₹ 231.43 and ₹ 363.07 that accounts for about 9.09 per cent for both marginal and small farmers and 8.80 per cent for semi-medium farmers from their overall expenditure for non-agricultural purpose.

By applying Wilcoxon Sign-rank test, we had *P-value* i.e. 0.008811 which indicated that there had been a significant difference between distribution of funds for agricultural and non-agricultural purposes. From further analysis we could state that agricultural purpose for utilization of funds had been the priority of the beneficiaries.

Through Kruskal-Wallis test (at a significance level of 5 per cent), we tested for analyzing the pattern of distribution of funds within the marginal, small and semi-medium categories of farmers. It was observed that the distribution across marginal, small and semi-medium farmers were same across categories of parameters for expenditure that included both agricultural and non-agricultural purposes.

## **5.2 Change in consumption pattern after implementation of PM-KISAN Scheme**

For study of change in consumption pattern of beneficiaries, we considered change in agri-input consumption for paddy cultivation under our case study. The objective was to analyze the change for consumption of agri-inputs by for the production of paddy. But it was also important to analyze normality of the dataset prepared from the primary data collected in year 2018 (i.e. before implementation of PM-KISAN Scheme) and 2021 (after implementation of PM-KISAN). For this purpose, Jarque-bera test was used. It was detected that the dataset was non-normal (Sig. value > 0.05). Thus, this problem was solved by using logarithmic transformation of the variables in the dataset and finally we were able to apply parametric tests to verify our data.

For further analysis, two sets of data were prepared. First of the consumption of beneficiaries and

second of the consumption of non-beneficiaries. From table 4.5, it could be observed that the consumption of DAP in marginal farmers on an average were 37.47 Kgs in year 2018 while it was 48 Kgs in year 2021 which accounted for an overall percentage change of about 28 per cent. Similarly in small farmers the consumption of DAP increased from 76.67 Kgs in year 2018 to 85.40 Kgs in year 2021 and for semi-medium farmers the consumption of DAP was 168.75 Kgs in 2018 which grew to 184.75 Kgs in 2021. The consumption of urea in year 2018 in marginal, small and semi-medium farmers were 37.47 Kgs, 76.67 Kgs and 168.75 Kgs respectively, which increased to 43.94 Kgs, 84.37 Kgs and 182.25 Kgs for marginal, small and semi-medium farmers respectively. The percentage increase for urea in marginal, small and semi-medium farmers were 17 per cent, 10 per cent and 8 per cent respectively. An average change in the consumption of pesticides were observed in year 2018, when compared to 2021 which was about 25.60 per cent. In year 2018, the consumption of pesticide for the production of local paddy were 60 ml, 122.6 ml and 270 ml for marginal, small and semi-marginal farmers respectively. But in year 2021, the consumption of pesticides for the production of local paddy grew to 92.80 ml, 155.80 ml and 320.00 ml for marginal, small and semi-medium farmers respectively. Similarly, a positive shift in the consumption was seen in the consumption of weedicides from 359.80 ml, 736.00 ml and 1620.00 ml for marginal, small and semi-medium farmers respectively in year 2018 to 534 ml, 936 ml and 1900 ml for marginal, small and semi-medium farmers respectively in year 2021. A percentage change in consumption of 48 per cent, 27 per cent and 17 per cent were observed for marginal, small and semi-medium farmers respectively when both of the year were compared. An overall percentage change of about 24.09 per cent was observed in the consumption of weedicides. Consumption of chemicals used in disease control has also seen an increase in these two years. In year 2018, consumption of chemicals for disease control were 259.80 ml, 736.00 ml and 1620.00 ml for marginal, small and semi-medium farmers while in year 2021, the consumption increased to 513.60 ml, 922.60 ml and 1825.00 ml for marginal, small and semi-medium farmers respectively. An overall percentage change of 20.09 per cent was observed. Usage of chemicals for seed treatment were also seen to grow in 2021 when compared to 2018. Consumption of chemicals for seed treatment were 359.71 gms, 736.00 gms and 1620.00 gms for marginal, small and semi-medium farmers respectively in year 2018. Whereas in year 2021, consumption for the same were 416.85 gms, 758.67 gms and 1732.50 gms for marginal, small and semi-marginal farmers respectively. An overall growth percent of 7.08 per cent was seen in the consumption of chemicals for seed treatment in beneficiaries of PM-KISAN Scheme.

Table 4.6 represents change in consumption pattern in non-beneficiaries in year 2018 and 2021. This gives us an idea of difference between the change in consumption pattern beneficiaries and non-beneficiaries.

In farmers belonging from

non-beneficiaries categories, DAP consumption were 37.47 Kgs, 76.67 Kgs and 168.75 Kgs in marginal, small and semi-medium farmers in year 2018 which changed to 39.50 Kgs, 79.00 Kgs and 175 Kgs for marginal, small and semi-medium farmers respectively in year 2021. The percentage change for year 2018 and 2021 were 5.42 per cent, 3.04 per cent and 3.70 per cent in marginal, small and semi-medium farmers respectively. Similarly, consumption of urea in year 2018 were 37.47 Kgs, 76.67 Kgs and 168.75 Kgs for marginal, small and semi-medium farmers respectively which changed to 40.00 Kgs, 80.00 Kgs and 175.00 Kgs in year 2021 for the same respectively. Percentage change in the consumption of urea were 6.75 per cent, 4.35 per cent and 3.70 per cent for marginal, small and semi-medium farmers for the years 2018 and 2021. In chemicals, consumption of pesticides in year 2018 were 60.00 ml, 122.60 ml and 270.00 ml for marginal, small and semi-medium farmers respectively which changed to 70.00 ml, 134.00 ml and 300.00 ml respectively for the same in year 2021. This represents a percentage change for consumption of pesticide as 16.76 per cent, 8.91 per cent and 4.94 per cent for marginal, small and demi-medium farmers respectively. The overall change in consumption for year 2018 and 2021 for all the categories of farmers were 6.05 per cent. The consumption for weedicide were 359.50 ml, 736.00 ml and 1620.00 ml for marginal, small and semi-medium in year 2018. But in year 2021, the consumption of weedicides were 400.00 ml, 800.00 ml and 1700.00 ml for marginal, small and semi-medium farmers respectively. The percentage change for year 2018 and 2021 were 11.20 per cent, 8.70 per cent and 4.94 per cent for marginal, small and semi-medium farmers respectively. The overall change in the consumption of weedicide was 3.84 per cent for all categories of farmers. Chemicals such as Bavastin powder dominated the consumption for agri-inputs in production of local paddy. Its consumption in year 2018 was 359.71 gms, 736.00 gms and 1620.00 gms for marginal, small and semi-medium farmers. But it grew to 380.00 gms, 740.00 gms and 1650.00 gms in year 2021. The percentage change was 5.64 per cent, 0.54 per cent and 1.85 per cent in marginal, small and semi-medium farmers for years 2018 and 2021. Its overall change was 0.53 per cent when both the years were compared.

### **5.3 Variables and constraints influencing the consumption pattern of funds under PM-KISAN scheme**

#### **5.3.1 Variables**

##### **a) Influence of Income-level on consumption-level:**

According to the results obtained from Karl Pearson's Correlation, We obtained a strong positive correlation between income and consumption (i.e. Karl Pearson Coefficient ( $r$ ) = 0.85). It was observed that as the when income of farmers *increases*, they tend to invest more in agriculture

for better quality of agri-input that could result in better productivity (Goodwin and Mishra (2005)). Other than agricultural expenses, it was also observed that consumption for essential nutrients such as protein, vitamins and minerals also increased with increase in income (Rao *et al.* 1982, Bhuyan 1992 and Das 1993).

**b) Influence of Gender on Consumption-Level:**

It is to study the influence of gender of the head of family on deciding the overall annual consumption expenditure. Chi-squared test (Non-parametric test) was conducted to analyse the variable for its significance and test whether it's dependent or independent of change in the consumption-level. For this purpose head of the family were grouped into two such as male-head and female-head. It was found that gender was independent and non-significant (as *P-value* > 0.05) on deciding the change of consumption for the beneficiaries under PM-KISAN. Therefore, we accept the null hypothesis ( $H_0$ ) that there is no significance between the variables and they are independent (Meinzen-Dick, Bernier, & Haglund, 2013).

**c) Influence of Education on Consumption-Level:**

For conducting the test, farmers were divided into four groups according to education-levels such as illiterate, Primary-level educated, Secondary-level educated, and Higher-level educated. *P-value* for the test was found to be less than 0.05 (i.e. *P-value* = 0.00057). Therefore, the null hypothesis could be rejected and alternate hypothesis is accepted which states that education-level and consumption-level were dependent and highly significant (Schultz 1964).

**d) Influence of Number of Earners on Consumption-level:**

To testify the influence of the number of earners on annual consumption expenditure, Chi-squared test was used.

In this test mostly the number of earners varied from one to two. Thus only this categories were evaluated against the level of consumption of the family. As could be seen that the *Pearson chi-square (r)* is 0.0011, therefore the null hypothesis is rejected and the alternate hypothesis is accept. Thus, it could be summarized that there is a significant relation between the number of earners and consumption of the farmer's family and they are dependent.

### **5.3.2 Constraints that affect in the implementation of PM-KISAN**

According to the ranks of the constraints the major problems in each departments in the

village-level were identified as such. Panchayat has been the grass-root unit of Panchayati-Raj system for implementation of schemes for rural farmers. It has the responsibility to coordinate and aware those farmers who are under their area of jurisdiction about various scheme. Although it has been ranked first which suggests that they needs to improve their efficiency. Some of the lacking that were found in the level were lack of funds to run Panchayat office and less exposure to Panchayat-Raj system (as it has recently been introduced after the formation of Union territory). Therefore, more exposure activities and funds are needed to be provided (especially in the BOP areas) to improve their efficiency. It could be seen that administration is ranked second out of the other constraints as testified through Garret-ranking technique. This could be due to various reasons that we also came across while ground survey. The implementation of PM-KISAN has categorically implemented through this department on a stage-process basis. Administration bears the responsibility to verify the documents of farmers that fall under the criteria of eligibility to be a beneficiary. The main reason behind it being the first ranked as constraint in implementation could be due to the distance of villages such as Laiyian, Chandu Chak, Choga, Bega and Abdullah which fall under Border Observation Post (B.O.P) in R.S. Pura Sector. This areas have less access to administrative facilities and frequent visit of staffs. Other reasons could be coordination and awareness among staff and farmers regarding the scheme and completion of KYC details. Banking system in rural and village areas are the financial backbone for the farmers. They could be contributed for removing informal credit system at high rate such from moneylenders and commission agents. Not only have they introduced the concept of saving and investment in rural and village areas but also they could be identified as main reason behind implantation of various insurance and Direct Benefit Transfer (DBT) schemes from the government to the farmers. They have a key importance for implementation and execution of PM-KISAN scheme as the transfer of credit to beneficiary farmers via bank account linked with their aadhar cards. Their behaviour and gesture have been professional and friendly towards the farmers. They have been ranked third in the rank of constraints. Thus, there remains some scope on improvement in the coordination and information dissemination regarding the schemes especially on the part of KYC updating and problems regarding crop insurance schemes. Agriculture department is an executive body that has the responsibility to properly implement and monitor all the schemes and their benefits to the farmers. After the requisites are cleared by the administrative and Panchayat, it is the duty of agriculture department to verify the eligible farmers and recommend them to adhere the benefits. It has been ranked fourth in the rank of constraints as their overall performance has been satisfactory. They have been reported to participate in the field survey and regular visits on the ground villages and aware them with adequate primary information regarding the scheme. Even in the

extremely backward areas (Border Out Post villages); they has been interactive with the local group of farmers. Thus, it could be said that they have been reliable source for implementation and execution of the scheme.

## Chapter-6

# *Summary and Conclusions*

## CHAPTER 6

### SUMMARY AND CONCLUSIONS

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The chapter summarizes the findings of the study. This chapter comprises of summary of the study, policy implications and suggestions for further work.

#### 6.1 *Summary and Conclusions*

PM-KISAN Samman Nidhi Scheme has been one of the prominent scheme which has been allocated approximately 50 per cent of the overall agriculture budget in financial year 2021-22. Its basic idea was derived from Rythu Bandhu Scheme of Telangana and Kali Scheme of Odisha. The PM-KISAN scheme aims to supplement the financial needs of the SMFs in procuring various inputs to ensure proper crop health and appropriate yields, commensurate with the anticipated farm income at the end of the each crop cycle. It provides to each eligible farmer's family 6,000 Rupees (₹) per year in three instalments of ₹ 2, 000 each. Initially, farmers with less than 2 hectares of land were eligible; subsequently, beginning in June 2019, the scheme was extended to all farmers totally 140 million across India.

The present study "Case study of change in consumption pattern of farmers in Jammu region under PM-KISAN Samman Nidhi "was confined to Jammu Region of Jammu and Kashmir (U/T) with following objectives :

1. To study the distribution and consumption of funds utilized from PM-KISAN Scheme.
2. To study the change in consumption pattern after implementation of PM-KISAN Scheme.
3. To study the variables and constraints influencing the consumption pattern of funds under PM-KISAN Scheme.

In Jammu region of J&K, Jammu district was selected based on the highest number of beneficiaries. Under the same circumstances, Ranbir Singh pura sub-divisional revenue area and at block-area level, R.S.pura and Miran Sahib were selected. Then, five villages were randomly selected from each block were selected that were namely Maralia, Dhande Kalan, Jassore, Kirpindi and Mehshian from Miran Sahib block. While Abdullian, Bega, Choga, Layian and Chandu Chak from R.S.pura block. From each village six beneficiaries and six non-beneficiaries were selected based on their land holdings. The farmers were then divided into three strata as semi-

medium

(2-4 ha), small farmers (1-2 ha) and marginal farmers (less than 1 ha). Two farmers each were selected from each stratum. By interview schedule method, data were collected from the respondents. Then change in their consumption pattern for agricultural inputs for the production of local paddy before and after implementation of the scheme was analyzed, distribution of funds allocated were studied and variables that influence the change of consumption pattern and also the constraints that occurred while implementation of PM-KISAN scheme were analyzed. The major findings of the study were summarized and presented in this chapter.

➤ **Distribution and consumption of funds utilized from PM-KISAN Scheme.**

- It was realized that the funds allocated by the farmers were proportionate and higher allocation of funds were for the agricultural purposes. It was also seen that the distribution and consumption of funds among various categories of farmers such as marginal, small and semi-medium; were equally distributed for various purposes.

➤ **Change in consumption pattern after implementation of PM-KISAN Scheme.**

- It could be observed that there was a significant change in the consumption pattern in inputs for production of paddy in surveyed areas.
- Higher difference in percentage change was observed in beneficiaries of PM-KISAN Scheme.

➤ **Variables and constraints influencing the consumption pattern of funds under PM-KISAN Scheme.**

- Strong and positive correlation was found between the consumption level and income-level.
- Variables such as education, income and number of earners in the family were found to be significant for the change in consumption pattern of farmers.
- Gender was found to have insignificant influence on the change in the consumption pattern.

## 6.2 Policy implication

- PM-KISAN Scheme is a Conditional Cash Transfer (CCT) or Direct Benefit Transfer (DBT) scheme which was a part of implementation of Universal Basic Income Strategy (Krishna M.R. 2018). But as thorough analysis of the study conducted by Haushofer and Shapiro (2016) suggested that there could be seen much more impact of the scheme if implemented on a long term basis rather than short-term basis.
- It is suggested to have a reliable personal e-KYC platform in form of mobile Apps (example e-wallets) that could help in easy verification of eligible and non-eligible farmers.

- Performance of CCTs/DBTs have better than that of distribution of consumer goods as they help farmers to disburse the funds according to their requirements (Fiszbein and Schady 2009). Thus, more such schemes should be promoted.
- Education is one of the key influencing variables that facilitates increase in consumption pattern that will ultimately lead to better quality food production and productivity (Juster F.T. 1975). Thus; steps should be taken to ensure education as of priority in non-agricultural consumption expenditure.
- Although we found that on the current scenario, utilization of funds are for basic necessities but in future that if promoted in utilization for entrepreneurial activities that will increase the number of earners in the family. Thus increasing overall household-income(Banerjee *et al.* 2017)

### 6.3 Suggestion for future work

- a) There is a need to study the problems and difficulties faced by the problems and difficulties faced by the tenant or landless farmers and provisions should be made for their inclusion in the scheme. This would benefit the most deprived section of farmers.
- b) Study related to the overall contribution and the multiplier effect should be measured which is been generated as an effect of PM-KISAN Scheme on overall farm investment.
- c) There is a need for the study of the change in adoption of agriculture technique before and after the implementation of PM-KISAN Scheme.



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# *Appendix*



**Sher-e-Kashmir University of Agricultural Sciences and Technology  
of Jammu**

**Interview Schedule for Masters Research Problem**

**Case Study of change in consumption pattern of farmers in Jammu region  
under PM-KISAN Samman Nidhi (PMKSN)**

S.No. \_\_\_\_\_ Village : \_\_\_\_\_ Block : \_\_\_\_\_

**SECTION A: SOCIO PERSONAL AND ECONOMIC PROFILE OF THE  
RESPONDENT**

1. Name of respondent :
2. Father's name :
3. Age of respondent (years) :
4. Marital Status : Married/ Un-married/ Widow/ Widower
5. Sex : Male/Female
6. Telephone/ Mobile no. :
7. No of family members :
8. Family composition :

Age	Male	female	Higher Education	Income year	Income/year	
					On farm	Off farm
0-15						
15-30						
30-45						
45-60						
Above 60						

9. Working people in family?
10. Farming experience (years)
11. Operational land holdings (in Kanals)

S.No.	Land holding (kanals)	Irrigated	Unirrigated	Total
(i)	Owned			
(ii)	Leased in			
(iii)	Leased out			
(iv)	Total operational land holding (i+ii)-iii			
12.	If leased out, sum of money received from the tenant per unit area If leased in, sum of money paid to the owner per unit area			_____
13.	Source of irrigation			_____
14.	Extension agency contact How often in a year? Purpose of contact 1. Agriculture      2. Non agriculture      3. Both			
15.	Access to credit : Yes/No 1. Source of credit: 2. Amount			
16.	u have ration card			Yes/No

## 17. List the crops cultivated last year

S.No.	Crop	Area (in Kanal)	Production (Kanal)

## 18. Crops grown for self consumption or sale, if sold, income out it.

Crop	Income (Rs)
1.	
2.	
3.	
4.	



1.	Bullock								
2.	Cow (local)								
3.	Cow (hybrid )								
4.	Buffalo								
5.	Sheep								
6.	Goat								
7.	Poultry								
8.	Others								

**Part II : Distribution & Consumption of funds utilized from PM-KISAN Scheme.**

**(A.) Amount of Fund Utilized :**

AGRICULTURAL PURPOSE		NON-AGRICULTURAL PURPOSE	
Land Preparation		Consumption Purpose	
Seed		Medical Expenses	
Fertilizers/FYM		Social Ceremonies	
Pesticides		Others	
Labour Cost			
Others			
<b>TOTAL</b>		<b>TOTAL</b>	
<b>Savings</b>		<b>Savings</b>	

**(B.) Area wise distribution of funds in Villages :**

S.No.	Name of Village	No. of Beneficiaries (Total)	No. of Beneficiaries			Total Funds Distributed	Remark
			I	II	III		

**Part III: Change in Consumption Pattern after implementation of PM-KISAN**

**Scheme:****Case Study (Basmati Production):****a. Cost of production of Basmati (Paddy) :****i. On Average before implementation of PM-KISAN (before 2019)****[1.] Use of Fertilizers:-**

Name of Fertilizer	Source of availability	Time of application	Method of Application	Quantity each time (kg/acre)	Total quantity (kg)	Price per unit (Rs./kg)	Total Price
DAP (P & N)							
Potash ( K )							
Urea (N)a.							
b.							
c.							
Micronutrient a.							
<b>Total</b>							

**[2.] Use of Pesticide**

Name of Pest	Crop stage (DAS)	Loss (%)	Pesticide use	Source of inf.	No. of appl.	Qt. (E/A)	Type of Ap. use	T.Q.	P	c/uc
Name of insect										
1.										
2.										
3.										
4.										
Name of Disease										
1.										
2.										
3.										
4.										
Name of Weeds										
1.										
2.										
3.										
4.										
<b>Total</b>										

**Qt.(E/A)= Quantity each time per acre, TQ= Total Quantity,  
Ap.=Applicator, P=Price, C/Un.=control/uncontrol**



4.										
Name of Weeds										
1.										
2.										
3.										
4.										
<b>Total</b>										

- b.  $Qt.(E/A)$ = Quantity each time per acre,  $TQ$ = Total Quantity,  
 $Ap.$ =Aplicator,  $P$ =Price,  $C/Un.$ =control/uncontrol

**(3.) Use of seed treatment chemicals**

Name of Seed treatment Chemicals	Source of information	Time of application	Method of application	Quantity (gm/kg)	Price per unit	Total price (rs.)	Result

**c. Village Data (Secondary Data) :**

**i. On Average before implementation of PM-KISAN (before 2019)**

Name	no. of Farmers	Production (Qtl)	(ha)	ctivity (%)

**ii. On Average after implementation of PM-KISAN (after 2019)**

Name	no. of Farmers	Production (Qtl)	(ha)	ctivity (%)

**Net Income = Gross Return – Total Cost**

**Part III: Variables & Constraints influencing the Consumption Pattern of funds under PM-KISAN Scheme.**

**a.) Study of Variables influencing the consumption pattern of Funds under PM-KISAN scheme.**

S.N.	Family Head Name	Consumption Expenditure (Annual Basis)	Family Size	Land Holding Size (Hectares)	No. of Earners in Household
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					

**b.) Study of constraints in implementation of PM-KISAN :**

S.No.	Queries	YES	NO
1.	Whether the instalment received in bank account on-time		
2.	If received Ist instalment		
3.	If received IInd instalment		
4.	If received IIIrd instalment		
5.	If increase in overall income compared to years before 2019		
6.	Whether any new technology ( Implements / HYV seeds/Chemicals) purchased		
7.	Are you satisfied with the amount of money received through PM-KISAN		

**Ranking: (marked from 1-5)**

1.	How will you rate the role of administration/officers/govt. employs in implementation of PM-KISAN.	
2.	How will you rate the role of bank employees/Staff in dealing with the implementation of PM-KISAN	
3.	How was the role of KVK/Agriculture Dept. in facilitating PM-KISAN	
4.	How was the role of village panchayat/sarpanch/staff in implementation of PM-KISAN	
5.	How will you rank the overall scheme of PM-KISAN	



*VITA*

**VITA**



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**CERTIFICATE - IV**

Certified that all the necessary corrections as suggested by the external examiner/ evaluator and the Advisory committee have been duly incorporated in the thesis entitled "CASE STUDY OF CHANGE IN CONSUMPTION PATTERN OF FARMERS IN JAMMU REGION UNDER PM-KISAN SAMMAN NIDHI" submitted by Mr. Ashish Verma, Regd No. J-20-M-714.

  
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Place: Jammu

Date: 26.08.22

  
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