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Problems and Prospects of Himalayan Farmers and Farming: A Case Study of District Kishtwar, Jammu and Kashmir

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Abstract: Agriculture is one of the fundamental features of the Indian economy. Agriculture along with its allied activities employs near about half of the population of India. The Himalayas form the major mountain ranges of the country and covers the northern and northeastern parts of the country. The Himalayan mountain region covers around 10 states of India including Jammu and Kashmir (J & K). The main source of livelihood of these regions is agriculture but the nature of agriculture is still traditional and is of subsistence type. The productivity is also low and unsatisfactory. This paper is an attempt to highlight some of the main problems faced by the farmers and to analyze prospects for the future growth of Himalayan agriculture. It also focused on analyzing the present status of farmers in the region. This paper is focused on district Kishtwar of J & K, a major Himalayan territory. The paper is based on primary data and a sample of 400 farmers has been taken for the study. The finding of the study shows that farmers in the region are mostly marginal and the area still lacks the irrigation facility. Still, the traditional mode of farming is practiced in the region. It also revealed that illiteracy, lack of information, lack of credit, lack of irrigation facilities, soil erosion, traditional mode of agriculture, etc. are some of the major problems faced by the farmers in the district. The area needs some immediate steps to be taken for the growth of agriculture in a real and much better way.

***Keywords*:** soil erosion, irrigation, productivity, hill agriculture, crops and organic farming

1. Introduction

India is the second most populous country in the world after China (UN-Pop, 2017). The geography of India is featured by the vast variety of climate, topography, flora and fauna, population, socio-economic features, etc. (FAO, 2017). Agriculture is the mainstay of the people providing employment to almost half of the population of India. But the share of the agriculture sector is declining contributes 17.8 percent to the total GDP of the country (Economic Survey, 2019). Agriculture is the most important sector for people to earn their livelihood and even contribute to economic growth (Wani, 2011). Agriculture in India has seen a drastic change after independence. The introduction of the green revolution in 1967 changed the scenario of Indian agriculture. It has made India a food-grains rich country (Ahmed & Hassen, 2012). The food grains production in 1970 was around 50 MT and it reached to 297 MT in 2019-20 (Ministry of Agriculture, 2020).

Food grains production increases as a result of new advanced technologies, farm mechanization, increased use

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of fertilizers and weedicides, more specialization, and certain government initiatives and policy-making. Besides this high production, Indian agriculture still faces a huge number of problems. These problems can be seen in terms of environmental degradation, soil degradation, soil erosion, air pollution, causing new threats to flora and fauna and many more (Gururani et al., 2021). Agriculture in India also faces problem like dependence on monsoon, poor technology, natural hazards, etc. which further affects the production and productivity of crops (Fatima & Hussain, 2012). Over a period of time, agriculture has experienced a huge expansion by changing land usage which further accelerates the rate of soil erosion (Tarolli & Sofia, 2016). But these problems are mostly seen in the Indian plains. The Himalayan region is overall different from than Indian plains in terms of topography, cropping patterns, mode of agriculture and in many more ways. The hill farming in the Himalayas is more prominently self-sustainable without any commercial interest (Pandey et al., 2016).

Indian landmass comprises of Peninsular Plateau, Northern plains, and the Himalayan region. The Himalayan region of India almost occupies the area of around 10 states covering the northern, eastern and northern-eastern part of the country. These states includes Jammu and Kashmir (J & K), Himachal Pradesh, Uttarakhand, Sikkim, Arunachal Pradesh, Meghalaya, Nagaland, Manipur, Mizoram, Tripura, and hill regions of 2 states viz. Assam (Karbi Anglong and Dima Hasao) and West Bengal (Darjeeling and Kalimpong). The Himalayan region covers almost an area of over 5000 sq km and is further divided into three parts as The Himadri (Greater Himalaya), Himachal (Lesser Himalaya), Siwaliks (Outer Himalaya). It is home to the population of around 4.6 crores (46 million) people living in little over 73,000 villages and nearly 500 towns (Census of India, 2011). The land under agriculture in the Himalayan region shows a different scenario of scarcity to adequacy scenario from west to east respectively. The average size of agricultural landholding declines over the years and for all classes, it came down to around one hectare.

J & K is a hilly territory and is also the part of the Himalayan region. J & K have a huge untapped stock of resources and have a wide scope of diversification. But at the same time has its own problems due to its hilly landscape. The landholdings of the farmer in the state are small and fragmented with very low use of quality inputs. Due to steep slopes, the soil is easily eroded, degraded, and thus losing its fertility. People living in hilly regions because of the communication gap and lack of road connectivity are not much aware of the modern and advanced farming techniques. Rainstorms, hailstorms, snowfalls, earthquakes, landslides, etc. are some of the common and major problems of the state. Thus, there is a need to examine the present status of farmer and the major problem faced by them in the Himalayan region of India

J & K like many other states of the country is primarily an agrarian territory with nearly 70% of its population living in rural areas (J & K Economic Survey, 2017). The total population of J & K (including the Ladakh division) is 1.25 crores. The literacy rate in J & K (including the Ladakh division) is 68.74% which is very low as compared to the national average (Census of India, 2011).

There are 20 districts in J & K territory and Kishtwar is one of them. The total population of the district Kishtwar is 230696. The literacy rate of the district is 56.20% which is very low and maybe one of the reasons for poor agriculture performance. The district has a temperate climate and has podsol soil which is very prone to soil erosion due to steep slopes. Saffron of the richest quality is grown in the district. Even in district Kishtwar (J & K) majority of its population depends upon agriculture. The nature of agriculture in the district is traditional and is of subsistence type. The production is also low and unsatisfactory. All this makes it quite necessary to find out the main reasons of low production in the region and to identify the possibilities for agricultural growth in the Himalayan region. Mushroom and Morchella locally known as Guchhi are also found in the forests of the district. The district is representing the different socio-economic features and climate variability defines it as a part of hills and mountain ecosystem. Hilly and mountain regions, different climate, extreme vulnerability to natural climate, poor infrastructure are some of the features of the region. This implies that the Himalayan district needs a distinctive treatment from the plain mainland.

The present paper is an attempt to find out the problems and prospects of Himalayan farmers and farming. The paper studies the Kishtwar district of J & K which is a part of the western Himalayas region. It is an attempt to analyze the present status of farmers in the region focusing on their land holding, availability of irrigation facility, awareness regarding organic farming, availability of seeds, availability of fertilizer and weedicides. It also examines the various problem of hill agriculture related to inputs, geographical (area) and other problems. Efforts have been made to extract out the various issues associated with the farmers and agriculture.

2. Review of literature

Agriculture is an ancient practice that is being performed by human beings. Agriculture has always been one of the key sources of livelihood. Agriculture can be considered as the science of cultivating parts of lands especially the fields of large areas as well as the planting seeds, harvesting of crops and raising livestock. Agriculture is an important sector of the Indian economy contributing a major share to GDP and providing employment to half of the population of the country (Arjun, 2013).

The share of the agriculture sector to the total GDP has continuously declined over the years. At the time of independence, it was around 54 percent, which further declined to 44 percent in 1970-71. In 1990-91 and 2009-10, it was 31.4 percent and 14.6 percent respectively (Central Statistics Office (CSO), 2011). Its share to GDP in 2020-21 is increased to 19.9 percent from 17.8 percent in 2019-20 (Economic Survey, 2020). The agriculture sector as well as its allied sectors average annual growth rate in real terms shows a static trend from last 6 years. The annual growth rate of agriculture and its allied sector (in real terms) during 2014-15 to 2018-19 was 2.88 percent. The estimated annual growth rate for the year 2019-20 was 2.9 percent (Economic Survey, 2019). On the other side, the sector faces repeated failures. The share of employment in the agriculture sector is also declining. In 2020, around 41.49 percent of the total workforce was employed in the agriculture sector in India (Plecher, 2020).

The physical division of India divides India into Himalayas, northern plains and peninsular plateau. Himalayas lies in the northeastern part of the country. Hilly slopes and mountains, climatic variations and different socio-economic conditions made it different from other parts of the country. Agriculture is the main source of livelihood in Himalayan regions and their labor force is their greatest input, seeds used by them are preserved from the previous year crop and also a single piece of land is used to grow many types of crops which makes it very difficult to estimate that how much land is devoted to a particular crop (Jethi et al., 2016). Roy et al. (2013) found that the majority of the farmers in the hilly regions of Uttarakhand District have either low or medium socio-economic status. About 25% of the farmers have only agriculture as their main source of income while the rest 75% of the farmers have some subsidiary occupation also. Most of the people in the hills grow cereals and particularly wheat, rice and maize are grown in about 80% of the total cultivated land. Other crops grown are pulses, millets, vegetables, oilseeds and fruit crops (Fatima & Hussain, 2012).

The hill agriculture is generally performed in terraces and is comparatively less productive than the plains of India (Khanal, 2018). From ancient time, farmers in the region had developed many techniques to raise their production. Along with food crops, livestock also contributing to the farmers in earning their livelihoods. Livestock plays an important role in raising the earning of farmers especially in mixed crop farming system (Pulamte, 2018). The hill agriculture in the Himalayan region is total of subsistence nature and crops are grown mainly for household consumption. Cereals alone have failed to provide food security to the people of the Himalaya. But fruits and vegetables still leading the sector. Around, 175 different vegetables are grown in the Himalayan region of India. The suitability of hills and mountains for horticulture crops generates significant employment and helps in diversifying the income of the farmers.

The hill agriculture in the Himalayan region has faced various problems. These problems can be associated with the geography of the region, farmers' backwardness, soil fertility, poor access to the market facilities, inputs problems and many more. According to the Burris (2015), Declining soil fertility and expanding population results in smaller landholdings. One of the main problems of hill agriculture is soil erosion. Soil erosion is mainly the runoff of the upper surface of the earth by rainwater and is one of the major threats to soil in hilly regions. It can cause a negative impact on the soil fertility, agricultural production and even carbon stock (Pangos et al., 2015). On the other hand, Small and fragmented land holdings, undulating topography are the dominant features of hill farming (Pathania, 2010). Pratap (2011) highlighted that the increasing crop-land scarcity and lack of irrigation facilities are the main problems in maintain agriculture on marginal lands. Due to small size of plots, medium and large size tractors will not be economical to use. Thus, factors such as topography, small and fragmented land, climate, lack of irrigation are the major natural obstacles affecting the farmers in the Himalayan region.

Barah (2010) founded that large-scale deforestation, soil erosion, high-intensity rainfall, snowfall and frost, acidic nature of soil, lack of infrastructure and lack of transport facilities are the main factors affecting the profile of hill regions. Agriculture practiced in the Himalayan region is unavoidably responsible for deforestation. Agriculture in a traditional way destroys the hill environment and forces the local population to migrate to the plain regions. Floods, severe soil erosion, decrease in productivity, reduced harvests from forests due to deforestation are prominent factors

having adverse effects on agriculture in hilly regions. Fatima and Hussain (2012) mentioned that lack of proper management technology, dependence on monsoon, poor planting techniques, natural hazards, stony soil, soil erosion, etc. are major constraints in hill agriculture. Yadav (2002) founded due to the small landholding size of plots, large and medium-sized tractors are not economical to use. Some other problems faced by the farmers are increasing crop land scarcity and water scarcity to maintain agriculture on marginal lands. Increased migration by males in search of income earning opportunities has created a shortage of labor and has created much workload for women (Pratap, 2011). Wani (2011) indicated that Lack of institutional support, lack of technical know-how, low marketing and poor infrastructure, lack of capital, soil erosion due to rolling topography, lack of irrigation facilities as well as farm inputs are creating obstacles in the way of hill agriculture. Due to the difference in irrigation facilities, rural electrification, use of chemical fertilizers, adoption of High- Yielding Variety (HYV) seeds, a huge difference can be seen in the agricultural development of different areas. Lack of agricultural credit is the main problem in the development of agriculture in India.

It is also found that cereal alone failed in bringing the farmers of the Himalaya out of food insecurity. With the development of new technologies and cropping systems, fruits and vegetables are emerging as the lead sectors generating more employment and diversifying the farm income. The past few decades has shown shifting of cropping pattern from agriculture to fruit crops in the region. A study conducted in central Himalaya covering 150 villages revealed that in the last 2 decades, the cultivated area under the traditional crops has been declined (Maikuri et al., 2001).

Agriculture backwardness can be attributed to the factors like low level of fertilizer consumption, lack of marketing and transportation facility, unavailability of improved seeds. Agriculture can be developed through economic transformations. There is a need of policy regarding the agricultural system in which much focus has been laid on the development of subsistence farming, intensive farming, and mixed farming is likely to be very effective in agricultural planning. Better infrastructure development, better transport facilities, modern inputs, credit availability, irrigation, storage facilities and area-based technology development are the immediate needs to develop the agriculture sector (Seitinthang, 2014). To provide sustainability to agriculture, the use of small tractors, power tillers and bullocks will be inexpensive and very beneficial especially in small landholdings. Farm income and employment could be significantly increased by shifting farmers from growing cereal crops to vegetable crops in potential areas and by developing marketing and other infrastructural facilities.

Literature has provided huge evidence that farming techniques in hilly regions are still primitive as well as simple. Due to the poor scope of industrialization in the hilly regions, agriculture despite its declining share is still the most important sector for the hilly areas of the economy. Before the advent of Green Revolution, the hilly states were the main supporter of India's total food production. But after Green Revolution now these states have to import food. The use of modern and mechanized inputs in such regions is very low.

Hill agriculture is mostly weak because of a lack of agricultural inputs and other tools required for hill agriculture. There is a lack of transportation and marketing facilities as well as a weak cooperative structure in the hilly region. Transportation cost alone accounts for 18% to 28% of the total cost of production in the hills and thus, a two-way linkage between the producer and agricultural markets is required so that the farmers can get remunerative prices (Nakro & Khiki, 2006). It is found that the traditional mode of farming in the old settled areas satisfies the basic need of the people without causing any damage to the land. This traditional model of farming has not been extended to the areas which are brought under plow which ultimately causing damage to the land.

Huge research has been conducted on the problems and prospects of agriculture in India and in some other countries also. But very little work is available on the agricultural conditions in the Himalayan region of India. Very few works are done so far relating to the condition of farmers in the Himalayan region. This paper is focused on district Kishtwar of J & K. There is hardly any research work discussing the problems and prospects of hill agriculture in district Kishtwar of J & K territory. To fill this important gap in the literature, thus there is need to analyze the various problems and prospects of hill farmers and farming in the district of Kishtwar.

3. Significance of the study

Agriculture is the mainstay of people of the Himalayan region of India. Around 70 percent of the population in the

region performs agriculture and its allied activities to earn their livelihood. Since there is a very scope of the industrial sector in the region due to hilly and mountainous terrains. Agriculture is the only sector that act as a source of livelihood to the Himalayan farmers. The hilly terrains and climatic variations even act as constraint in the development of the agriculture sector in the which in turn affects agricultural productivity. For the agricultural development in the region, the primary problems and constraints are needed to be identified. The research paper will be an attempt to find out the major problems which are related to the hill agriculture. Since very few works is so far done to access the problem and prospect of Himalayan farms and farming, this paper will be helpful for the policymakers and stakeholders in understanding the various problems and prospects of the farmer in the region. It will also help them in framing various policies for the agricultural development of the Himalayan region.

4. Objectives of the research paper

The main objectives of this research paper are as:

- To find the present status of farmers and farming in the district Kishtwar.
- To evaluate the major problems of farming in the district Kishtwar.
- To find out the prospects of hill agriculture in the district Kishtwar.

5. Research methodology

5.1 *Selection of the study area*

The present study aims to examine the status, problems and prospects of hill agriculture in district Kishtwar of J & K. District Kishtwar is almost mountainous and is a part of the middle and greater Himalayas. Kishtwar is surrounded by the Himalayas from all sides and is known for Marwah-Warwan valley, Chattroo valley and Paddar valley. It is also known as the "land of Saffron". It is rich in forest resources. Agriculture can provide livelihood to around 90 percent of the population of the district directly and indirectly. The district has a gross cultivated area (Kharif and Rabi crops) of 25078 hectares and a net sown area of 19064 hectares (Chief Agriculture Officer, Kishtwar). The major crops of the area include Paddy, Maize, Wheat, Millets, Pulses, fodder and Vegetables. The potential of the agriculture sector in the region is very high and remained untapped.

5.2 *Sample design and sample size*

Multi-stage sampling technique has been used to draw the sample. In the first stage, among the hilly districts of J & K, district Kishtwar has been selected randomly. Kishtwar lies in the middle as well as greater Himalayas. in the next stage, two blocks have been selected namely Kishtwar and Paddar block. Further, a total of 8 villages have been selected randomly, 4 from each block. At 5 percent level of significance using Slovin's formula [Slovin's Formula: $n = [N/1 + (N \times e^2)]$ Where, n = Sample Size N = Total Population e = error tolerance], out of total number of farmers in the district, a sample of 400 household has been selected. Out of total sample, 50 respondents have been taken from each village.

5.3 *Data collection and respondent*

The study is exclusively based on primary data. The respondent is primarily engaged in agricultural activities. Data is collected using a well-designed schedule. The interview method has been used which involves face-to-face interaction with the farmer.

6. Tabulation and analysis of data

The tabulation and analysis of data is further categorized into three parts represent different objectives of the study.

6.1 *Present status of farmers and farming in district kishtwar, J & K*

As far as the present status of farmers and farming in the district Kishtwar is concerned, various indicators have been studied in order to draw the analysis. These include the classification of farmers on the basis of their landholding, the status of irrigation in the area, awareness of farmers regarding organic farming, Possession of Ploughing Asset, fertilizer usage, type of fertilizer used, pesticide usage and type of seeds used. These indicators provide the clear picture regarding the present position of farmer and also helpful in understanding the type of farming in the region.

Table 1. Classification of farmers in terms of their land holding size

Classification of Farmers	Frequency	Percent (%)
Marginal (Up to 1 hectare)	336	84.0
Small (1 to 2 hectare)	46	11.5
Medium (2 to 4 hectare)	18	4.5
Total	400	100.0

Source: Field Survey, 2020

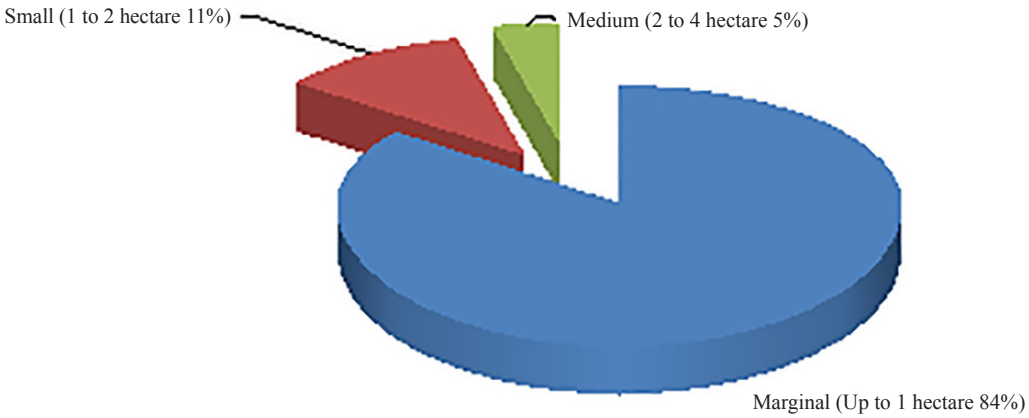

Figure 1. Classification of farmers in terms of their land holding size

In a nation like India, the land is considered a symbol of wealth. In rural villages, some farmers possess large landholdings while some possess small. Table 1 shows the data for the classification of farmers in terms of their landholding size. The table reveals that the majority of the farmers (84%) are marginal farmers and possess land only up to 1 hectare. Around 11.5% are those possessing land between 1 to 2 hectares. Only 4.5% are those who fall in the category of medium farmers possessing land up to 2 to 4 hectares. The Figure 1 reveals that the majority of famers possess small landholdings. This will result in lower output. Thus, there is a need to provide subsidiary occupation to these farmers so that they able to fulfill their necessities and make their living better. This reveals that small size land holdings are a serious problem in the study area.

The below Table 2 shows that the majority (52.8%) of the farmers are having landholdings which are neither fully nor partially irrigated. Around 7.5% of the farmers have responded that they have partially irrigated land. The proportion of the farmers having fully irrigated land is 39.8% which is not that satisfactory. Poor irrigation facilities are among the major problems of hill agriculture. Due to hilly terrain and crags, it is quite difficult to provide better irrigation facilities which further impact the agricultural output. Thus, the area needs some proper steps to be taken for improving irrigation

facilities.

Table 2. Status of Irrigation facility in district Kishtwar, J & K

Irrigational Status	Frequency	Percent (%)
Yes	159	39.8
No	211	52.8
Partially Irrigated	30	7.5
Total	400	100.0

Source: Field Survey, 2020

6.1.1 *Awareness among the farmers regarding organic farming*

In recent years, organic farming has acquired increasing popularity (Dangour et al., 2010). Organic farming is the process of avoiding the use of unnaturally compounded fertilizers, pesticides, insecticides, growth ingredients and other livestock food additives. India is also taking certain initiatives to increase the scope of organic farming.

Table 3. Responses of farmers regarding their awareness of organic farming

Educational Qualification	Yes	No	Unaware but performing	Total
Illiterate	12	27	10	49
	24.5%	55.1%	20.4%	100.0%
1-8th	39	53	14	106
	36.8%	50.0%	13.2%	100.0%
9-12th	74	89	18	181
	40.9%	49.2%	9.9%	100.0%
Graduation	28	11	-	39
	71.8%	28.2%	-	100.0%
Post-Graduation (PG)	19	4	-	23
	82.6%	17.4%	-	100.0%
Above PG	2	-	-	2
	100.0%	-	-	100.0%
Total	174	184	42	400
	43.5%	46.0%	10.5%	100.0%

Source: Field Survey, 2020

Table 3 shows the awareness among the farmers regarding organic farming. It is evident from the table that with the increasing level of education, awareness regarding organic farming is more seen. The above table also shows that majority of the farmers (54.0%) are performing organic farming either deliberately or unconsciously.

Table 4. Distribution of farmers by their possession of ploughing asset

Ploughing Asset	Frequency	Percent (%)
Power Tiller	31	7.75
Wooden Plough	170	42.5
Both	58	14.5
Hire	141	35.25
Total	400	100.0

Source: Field Survey, 2020

Plowing is an important feature of cultivation and enhanced plowing asset is very crucial for better results. The above Table 4 reveals that the majority (42.5%) of the farmers have a wooden plow for plowing their fields. Only 7.75% of the farmers having Power Tiller and 14.5% of the sampled population possesses both power tiller and wooden plow. A very small proportion is having power tiller which is a sign of the traditional mode of agriculture in the area. Also, 35.25% of the sampled population has to hire ploughing assets. Thus, It clearly indicates the poor condition of the farmers in the study area.

Table 5. Distribution of farmers by fertilizer usage, type of fertilizer used, pesticide usage and type of seeds used

Factor inputs	Responses	Frequency	Percent (%)
Fertilizer usage (whether using or not)	Yes	292	73.0
	No	108	27.0
	Total	400	100.0
Type of fertilizer used	Chemical Fertilizer	117	29.3
	Mixed	176	44.0
	None	107	26.7
	Total	400	100.0
Pesticide Usage (whether using or not)	Yes	212	53.0
	No	188	47.0
	Total	400	100.0
Type of seeds used	Domestic	245	61.3
	Mixed	155	38.8
	Total	400	100.0

Source: Field Survey, 2020

Table 5 deals with various responses of farmers relating to fertilizer usage, type of fertilizer used, pesticide usage and type of seeds used. The above table depicts that majority i.e. 73.0% of the farmers have responded that they use fertilizers in the production of crops. A very small proportion (27.0%) of the farmers is not using fertilizers in their fields. On the other hand, the majority i.e., 44.0% of the farmers have responded that they use the mixed types of fertilizer (both chemical as well as biofertilizer) in the production of crops. The proportion of the farmers using only chemical fertilizer is 29.3% and the proportion of the farmers not using any type of fertilizers in their fields is 26.7%. From the above analysis, it can be said that the farmers in the study area do not rely much on chemical fertilizers. It means that the area has a very good potential of organic farming.

The above Table 5 also depicts the usage of pesticides in the study area. More than half of the sampled population i.e., 73.0% of the farmers have responded that they use pesticides in the production of crops. The percentage of the sampled population not using pesticides is 47.0%. It means that crop destruction by pests is a problem to a certain extent in the area. The majority (61.3%) of the farmers have responded that they use domestic seeds (seed preserved from previous year produce) in the production of crops. The proportion of the farmers using the mixed type of seeds, that is, domestic as well as High Yielding Variety seeds provided by the Agriculture department or are available in the market is 38.8%. As majority of the farmers are still using domestic seed, thus, depicts old-style of agriculture.

Thus, on the basis of above analysis, it is clear that marginal farmers (land up to 1 hectare) dominate the region. The district still lacks the irrigation facility as well as people are not much aware regarding organic farming. The majority of the farmers are using the fertilizer but they are still using domestic seeds.

6.2 *Problems of farming in district kishtwar, J & K*

The main problems associated with farming in the district Kishtwar are further divided into three parts as Input related problems, area-related problems and other problems. Input-related problems are associated with the inputs used by the farmers. This covers the traditional mode of farming, small land holding, lack of credit facilities, etc. the area related problems deal with the geographical hurdles like steep slopes, soil erosion, poor productivity, lack of road connectivity, etc. While other related problems include lack of information and knowledge, lack of market, illiteracy, price-related problems, difficulty to get benefit from govt. Schemes, indebtedness and lack of institutional support.

Table 6. Distribution of farmers by their perception regarding inputs related problems

Problems	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree		Total	
	F	%	F	%	F	%	F	%	F	%	F	%
Traditional Mode	223	55.8	174	43.5	2	0.5	1	0.3	-	-	400	100.0
Small land Holding	244	61.0	155	38.8	1	0.3	-	-	-	-	400	100.0
Lack of Infrastructure	168	42.0	227	56.0	3	0.8	2	0.5	-	-	400	100.0
Credit Availability	130	32.5	230	57.5	16	4.0	15	3.8	9	2.3	400	100.0
Lack of Electricity	92	23.0	103	25.8	5	1.3	122	30.5	78	19.5	400	100.0
Lack of Irrigation	105	26.3	135	33.8	10	2.5	70	17.5	80	20.0	400	100.0
Poor Seed Quality	96	24.0	185	46.3	112	28.0	7	1.8	-	-	400	100.0

Source: Field Survey, 2020

Table 6 shows problems related to inputs in the Kishtwar district. The above table shows that majority of the farmers i.e., 55.8% are strongly agreeing that the mode of farming in the area is traditional. Again, the majority of the farmers is of the opinion that small landholding size is another serious limitation. The Figure 2 clearly shows that lack

of infrastructure, lack of credit and poor-quality seeds are the major input related problems. Farmers suffer a lot while facing these problems. Thus, there is an urgent need to make some effort that will help farmers to come out of these problems.

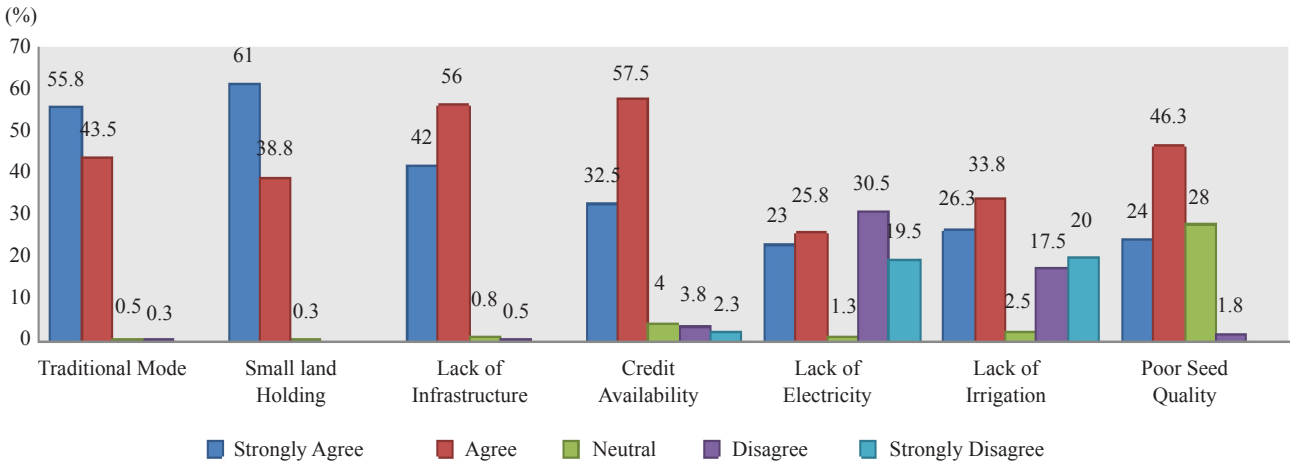

Figure 2. Perception of farmers regarding inputs related problems

6.2.1 *Perception of farmer regarding area related problem*

The hill and mountain region of India show unique ecological as well as topographical diversities. Agriculture in the hilly area is mostly dominated by the traditional practices which further causes multiple problems and uncertainty. Hill agriculture has some constraints like steep slopes, problem of soil erosion, poor productivity, and lack of road connectivity, boulders and many more. The below tables deal with the perception of households regarding their area-related problems.

Table 7. Distribution of farmers by their perception regarding area related problems

Problems	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree		Total	
	F	%	F	%	F	%	F	%	F	%	F	%
Steep Slope	185	46.3	183	45.8	31	7.8	1	0.3	-	-	400	100.0
Soil Erosion	106	26.5	166	41.5	31	7.8	58	14.5	39	9.8	400	100.0
Poor Productivity	7	1.8	24	6.0	1	0.3	205	51.3	163	40.8	400	100.0
Scattered Land Holding	204	51.0	187	46.8	9	2.3	-	-	-	-	400	100.0
Lack of Road Connectivity	51	12.8	2	0.5	17	4.3	200	50.0	130	32.5	400	100.0
Boulders	17	4.3	30	7.5	40	10	179	44.8	134	33.5	400	100.0
Crop Destroyed by Pests/ Insects/Wild Animals	181	45.3	214	53.5	3	0.8	1	0.3	1	0.3	400	100.0

Source: Field Survey, 2020

Table 7 deals with the area specific problems in the Kishtwar district of J & K. It shows that the majority of the

farmers is agreeing that steep slopes, soil erosion, scattered landholding and crop destruction by pests, insects, wild animals, etc. are some of the common problems which they have to face. The below Figure 3 depicts soil productivity is very good in the study area as the majority of the farmers has responded that poor productivity of soil is not a problem in the area. It means that the area has much potential for good agricultural produce.

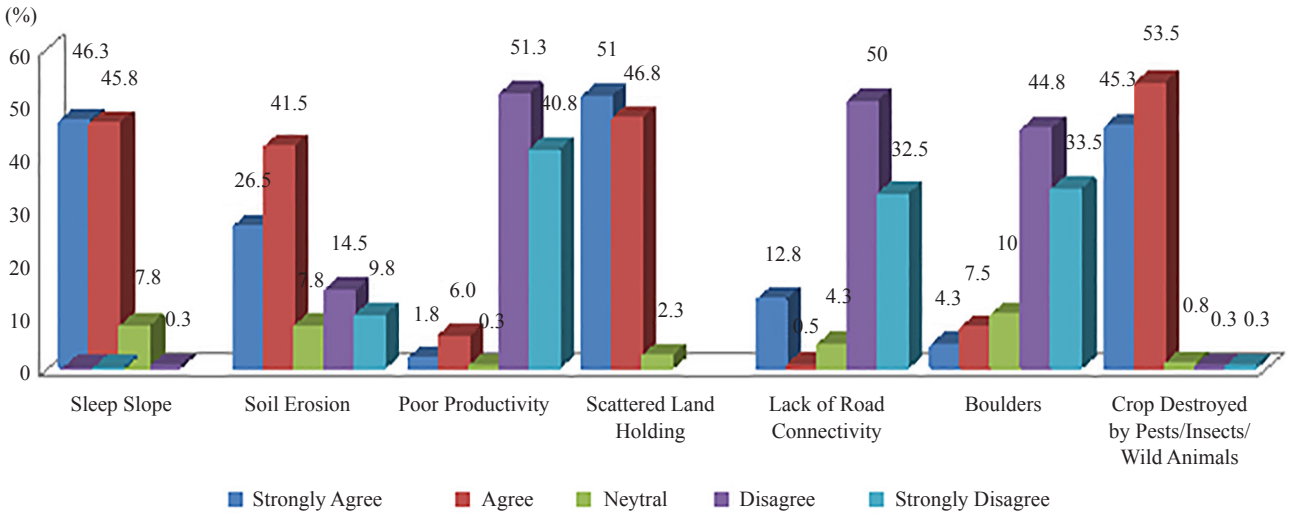

Figure 3. Distribution of farmers by their perception regarding area related problems

Table 8. Distribution of farmers by their perception regarding other problems

Problems	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree		Total	
	F	%	F	%	F	%	F	%	F	%	F	%
Lack of Information and Knowledge	99	24.7	196	49.0	47	11.7	39	9.7	19	4.75	400	100.0
Lack of Market	154	38.5	238	59.5	8	2.0	-	-	-	-	400	100.0
Illiteracy	93	23.2	82	20.5	22	5.5	163	40.7	40	10.0	400	100.0
Price Related Problems	198	49.5	202	50.5	-	-	-	-	-	-	400	100.0
Difficulty to get Benefit from Govt. Schemes	134	33.5	85	21.2	7	1.75	106	26.5	68	17.0	400	100.0
Indebtedness	2	0.5	16	4.0	15	3.75	229	57.2	138	34.5	400	100.0
Lack of Institutional Support	142	35.5	193	48.2	63	15.7	-	-	2	0.5	400	100.0

Source: Field Survey, 2020

The agriculture sector beyond the above mention problem also faces a number of problems which are mostly associated with farmers, market structure, finance and many more. Some of such problems which are faced by the farmers are mentioned in the Table 8.

The Table 8 shows that there are some other problems which are found in the study area that are responsible for poor agricultural performance. From the table, it is found that a huge number of the respondents are of the opinion that lack of information and knowledge regarding new techniques related to agricultural practices, lack of market for

selling agricultural product are some major problems. Illiteracy among the farmers is also a problem to some extent. Some other problems according to the farmers in the study area are price-related problems as the farmers do not get a reasonable price for their product. Majority of them do not get the benefits of various government schemes. Lack of institutional support is another serious problem which is faced by the farmers in the study area. One major finding from the above table is that the farmers in the study area have no debt burden.

6.3 *Prospects of hill agriculture in the district kishtwar*

On the basis of the primary data collected from the respondents, certain prospects have been identified these are mention as

•The majority of the farmers are carrying out organic farming either purposefully or unintentionally. Carrying out of organic farming is suitable for maintaining the fertility of the soil and make it free from any harmful fertilizers or pesticides. There is a positive relation between educational attainment and awareness regarding organic farming. This might help reduce the dependence on harmful substances in raising the productivity of the farmers.

• One main finding is that the farmer has no burden of debt.

• Soil productivity is very good in the study area. It means that soil very much fertile in the area. It can help raise the production of crop in the region.

• Boulders are also not found in the soil making it more resourceful.

• It is also found that farmers are gradually diversifying towards vegetables. The region has great potential of production of vegetables.

• Animal manure is widely used for restoring the fertility of soil.

7. Conclusion

Agriculture is an age-old practice performed in almost every region of this world. Agriculture employing almost half of the country's population is the backbone of India economy. Despite its significance in boosting the economy, the share of agriculture in India is declining year after year. This research paper is an attempt to analyze the problems of agriculture in India. The research paper is focused on district Kishtwar of J & K territory. The reason for the selection of this region is its marked backwardness. The paper also highlights the prospects of agriculture and is an attempt to help the farmers to earn their livelihood from agriculture in a much better way. It is concluded that agriculture in the Himalayan region is still in a primitive stage. It has faced a number of problems associated with the topography, input used and many more. There is an urgent need to focus on the various issues and problems associate with the farmers of the Himalayan region. More attention is required in order to make hill agriculture more prosperous and productive.

8. Policy implications

Based on the results of this research paper some of the policy implications are as follows:

• Educational facilities need to be improved in order to increase the socio-economic status of the households as education is very necessary for every aspect of development.

• Irrigation facilities should be made available to the farmers by constructing proper canals, tube wells, water tanks, etc.

• Farmers should be given proper training regarding various activities involved in agriculture. They should be provided with information regarding advanced techniques of cultivation.

• In order to protect soil from being eroded afforestation and various other methods used to check soil erosion should be encouraged.

• Farmers should be given proper knowledge about the agriculture markets like e-NAM where the may get fair prices for their products

• Infrastructure should be developed like cold storage houses where farmers can preserve their perishable agricultural produce.

• As land holdings are small and big tractors are not feasible, power tillers should be encouraged and should be provided to the farmers at subsidized rates.

• There is an ample scope of organic farming which is very much in demand in modern days and this needs to be encouraged more and more.

• As soil is highly fertile little effort will be required to cultivate crops which are otherwise very difficult to grow.

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