

## **Cropping and land use patterns in Jammu and Kashmir : A Case Study of District Reasi.**

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### **Abstract:**

Agriculture occupies a very important place in the country's economy. It is the backbone of the oriental world. The developing countries like India have more than 70 per cent of population dependent upon agriculture. Jammu and Kashmir predominantly an agrarian region, directly and indirectly it support approximately 80 percent of population. The present research study deals with the issue of land-use pattern, land holding and crop combination in Reasi district of Jammu and Kashmir. Therefore, it become very essential to study the land-use pattern, land holding and crop combination so as to see agricultural activities of the study area. Changes in these factors reflect a very clear picture of agriculture diversification. The present study analyse that maize is the first rank crop, during the study period and about 46 percent area out of total cropped area is under maize. Wheat has been found the second rank crop cultivated in the study with increasing trends. The study also finds that out of total geographical area, area under forest is 45 percent and under cropped are is 26 percent. For analysis of change in study areas under different variables percentage method was used as statistical tool.

**Keywords:** Agriculture, Land use, crops, land holding, cropping pattern.

### **Introduction**

Agriculture occupies a prominent place in the country's economic system. Although its contribution in country's Gross Domestic product had sequentially declining from approximately 50 per cent in 1950's to 14.6 percent in 2010. Despite that a sizable proportion of about 65 percent of population depends on agriculture sector.

Jammu and Kashmir (UT) blessed by some of the highest mountains of the world and a land of immense natural and socio-cultural beauty, is known as the paradise on earth. "Jammu and Kashmir is known for its scenic landscape, beautiful valleys, lakes, snowcapped mountains, cool climate, skiing, trekking and fishing opportunities, and archaeological, historical, cultural and religious places all over the world (Ahanger 2018)". Agriculture is the predominant sector in the economy of Jammu and Kashmir directly and indirectly it supports more than 80 percent of population.

Reasi district is a hilly region and has geographical extent between 32° 54' North to 33° 45' North latitude and 74° 18' East to 75° 9' East longitude in the Union Territory of Jammu and Kashmir. The general relief of the study area is 1529 feet above mean sea level. The northern boundary of Reasi is marked by Pir Panjal mountain range. It is bounded by District Kulgam in its north, District Ramban on its east and District Udhampur on its south-east. On its South lies the District Jammu and is surrounded by District Rajouri in the West. Reasi has a total geographical area 151701 hectare.

## Objectives

The present paper seeks to fulfil the following Objectives:

1. To analyse the change in land holdings in district Reasi
2. To analyse the land utilisation and cropping pattern in district Reasi

## Statement of the problem:

Socio-economic development of any region results from various social, economic, political and technological factors working combined to accelerate the economic growth and social change for the development of the area. Agriculture is an important economic activity and an essential socio-economic developmental sector in Reasi district of union territory of Jammu and Kashmir. Therefore it becomes important to study the it become very essential to study the land-use pattern, land holding and crop combination so as to see agricultural activities of the study area.

## Methodology

The present study is primarily based on secondary source of data. The data used for investigation of different land holdings, land use patterns and cropping patterns of district Reasi were drawn from various reliable and published sources such as Finance commission (Rev) 2017-18, Agricultural census 2015-16, Economic survey 2008-09, Economic census 2016-17 and 2020-21, Regional digest jammu 2015-16, that are used for analysis of present study. Simple percentage method and tabular analysis were used to fulfil the objectives of the present study.

$$\% \text{ area under land category} = \frac{\text{Area under land use}}{\text{Total geographical area}} \times 100$$

$$\% \text{ change in AUC} = \frac{\text{Area under crop period II} - \text{area under crop period I}}{\text{Area under crop period I}} \times 100$$

$$\% \text{ change in land holding} = \frac{\text{Area in hectare / Number 2015-16} - \text{Area in hectare / Number 2005-06}}{\text{Area in hectare / Number 2005-06}} \times 100$$

## Results and discussion:

Out of total geographical area (151701 hectares) of the study area, land available for cultivation is only about 27 per cent which is 40761 hectares. The primary occupation of the people of the study area is agriculture and allied activities. Subsistence type of agriculture is practised by most of the farmers, more than 70 per cent of farmers have landholding below 1 hectare ( Agriculture Census 2015-16). The main salient features in the study area are studied under following sun headings.

### Land use patterns

Land of an area is very important resource. There is a great variation in the land use pattern in the study area, It is often said that mountains are rich in resources. The fact, however, is that usable resources are extremely limited. The percentage of different categories of land to total geographical area was determined to raise the status of different land categories and

net sown area of district Reasi of Jammu and Kashmir. The main land use categories in the study area are given in the table 1.1

### Area Under Forest

The proportion of area under this category has comparatively higher than other categories, the data indicate that out of total geographical area forest occupies 45 percent which is 68958 hectare.

### Area not available for cultivation

The data indicated that out of the total area 32718 hectare of area under not available for cultivation, under this category land put to non-agriculture is 3.63 per cent that is 5507 hectare and under barren and un-cultivable land is 17.92 per cent.

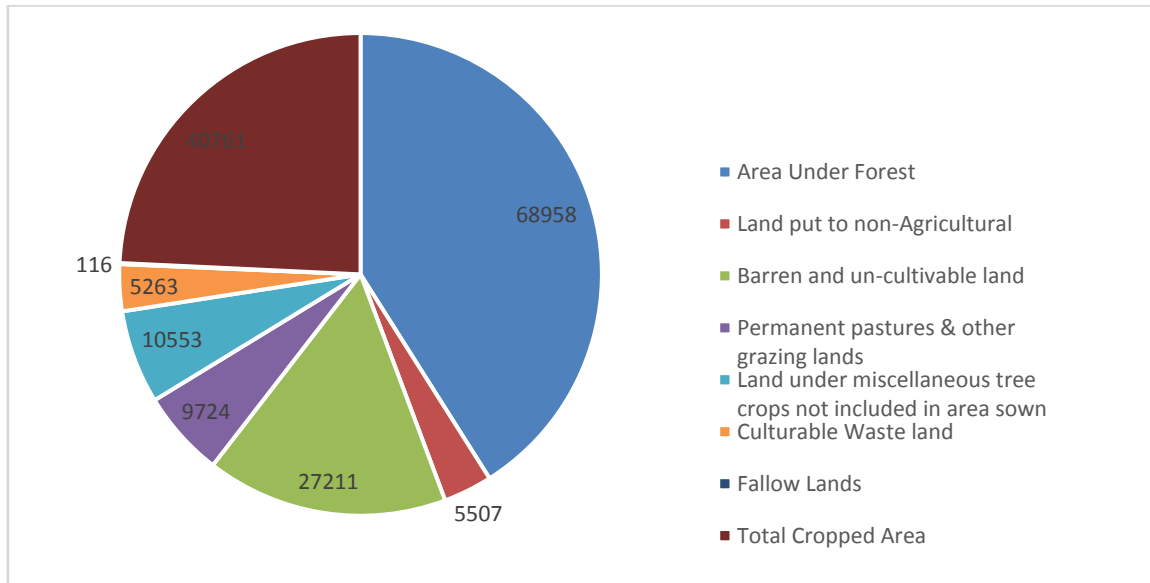
Table(1.0) Classification of total area (2019-20) in Reasi district of Jammu and Kashmir UT.

(Area in hectare)

Type		Area	Percentage of reported area
Total Area		151701	100%
Area Under Forest		68958	45.45%
Area not available for cultivation	Land put to non-Agricultural	5507	3.63%
	Barren and un-cultivable land	27211	17.92%
Other uncultivated land excluding fallows	Permanent pastures & other grazing lands	9724	6.40%
	Land under miscellaneous tree crops not included in area sown	10553	6.95%
	Culturable Waste land	5263	3.46%
Fallows Lands	Fallow land other than current fallows	52	0.034%
	Current fallows	64	0.042%
Net area sown		24369	
Total cropped area		40761	26.86%
Area Sown more than Once		16392	

Source: Financial Commissioner (Rev.)

Fig (1.0) Land Use Pattern in Study Area



### Other uncultivated land excluding fallows

It is also clear from the table that area under this category is 17 percent which is 25540 hectare. Out of that area under permanent pastures & other grazing lands is 6.40 ( 9724 hectare), Land under miscellaneous tree crops not included in area sown is 6.95 per cent (10553 hectare) and under Culturable Waste land is 3.46 percent (5263 hectare).

### Fallows Lands

Area under this category of land use is very less only 116 hectare in both categories that is fallow land other than current fallows and current fallow.

### Total Cropped Area

The area which is under the crop is known as cultivated land. In other words, in this category, all that land is considered which is under irrigation and non-irrigated. Out of the total geographical area of Reasi 151701 hectare, only 26.86 percent land is cultivable which is 40761 hectare.

### Cropping Patterns

Cropping pattern means the proportion of area under different crops at a time. Cropping pattern is however, a dynamic concept as it changes in space and time. As stated at the outset, cropping structure of a region is the direct outcome of physical, socio-cultural and historical factors.

Characterized with mountainous and undulating terrain and micro-level variation in temperature, precipitation and soils, the state of Jammu and Kashmir has a high degree of variation in its cropping patterns (Hussain, 2000).

Cropping pattern is also affected by the skill and knowledge of farmer. If the farmer knows about the technological advancement and modern techniques in agriculture practices, then they adopt only those crops which are more in demand and hold value in market and it gives them profit and is suitable to the geographical conditions. On the other hand, if the farmer is not well educated and has no concern with the modern varieties and techniques, they ignore all those factors and choose only traditional crops which has low value, as well as, less demand. Consequently, there is less profit and agriculture is one of the subsistence level and they can't contribute to economic activities. Therefore, it is fact that the income

of the farmers, and consequently state of economy can be improved by adopting suitable cropping patterns.

Table No. (2.0) Cropping Pattern 2015-16 and 2019-20 in Reasi of UT of Jammu and Kashmir

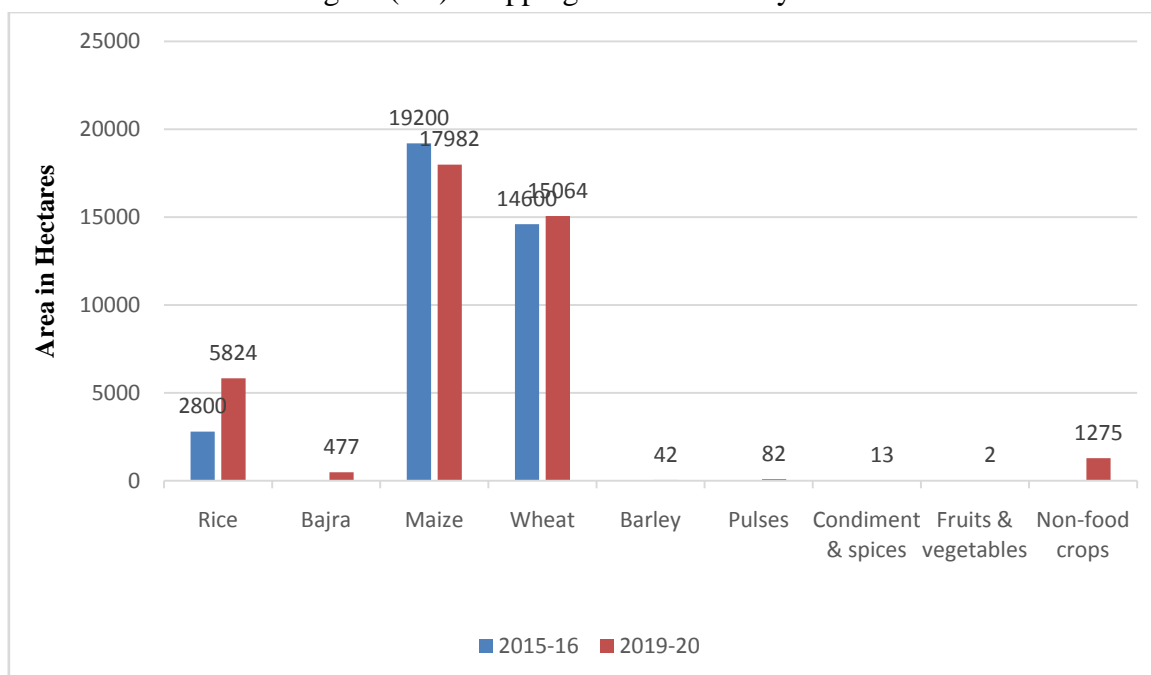
Area (in hectare)

S. No.	Food crops	2015-16		2019-20		Percentage change
		Area	Percentage	Area	Percentage	
01	Rice	2800	7.1%	5824	14.75%	108%
02	Bajra	NA		477	1.20%	
03	Maize	19200	48.62%	17982	45.54%	-6.34%
04	Wheat	14600	37%	15064	38.15%	3.18%
05	Barley	NA		42	0.11%	
06	Pulses	NA		82	0.21%	
07	Condiment & spices	NA		13	0.03%	
08	Fruits & vegetables	NA		02	0.005%	
09	Total food crops	39486	100%	39486	100%	

S. No.	Non-food crops	Area 2019-20	Percentage
01	Oil seeds	1194	93.65%
02	Fodder crops Include Oats	76	5.9%
03	Other non-Food crops	05	0.39%
04	Total non-Food crops	1275	100%

Source: Financial Commissioner (Rev.)

Figure (2.0) Cropping Pattern in Study Area



Like most of the agricultural areas of hilly regions this study area has also different crops in different seasons. There are many crops in the study area i.e. maize, rice, wheat bajra pulses and orchard of different fruits. But maize wheat and rice and the dominant crops. So, that, we can divide the crops according to their cropping seasons, i.e. mainly rabi and kharif crops.

### **Kharif crops**

Kharif crops are sown in the month of June and July and harvested in September-October. These crops are grown during rainy season. During the year 2015-16 maize was the main dominant crop in the study area. It is practiced by majority of the households in the study area.

In the kharif season, main crops grown in the study area were maize, rice, bajra, pulses fodder etc. Area under different food crops and others is shown in table

#### **i ) Maize:**

Maize can be grown in such regions where summer is long enough to permit its cultivation, and frost does not set in too early. It needs about 30° temperature at the time of germination, growth and development, and over 20° at the time of ripening (Hussain, 2000).

Maize was the first ranking crop in the study area in the year 2015-16 as the data shown in table above it is cultivated on an area of around 19200 hectare, however, there is slight decline in maize cultivation (17920 hectare) during 2019-20. The data indicate negative percentage change of maize crops in the study region from 2015-16 to 2019-20, which is - 6.34 percent. Despite, that maize is a staple food of majority of people in reasi. Moreover, the grains forms an important cattle food, being fed to farm cattle.

#### **ii ) Rice:**

Rice can be grown only in the warmest months of summers (July-September). In the study area, rice cultivation is very less in comparison to maize. It is mostly grown in foot hill areas and plain areas of Reasi. The study had shown an increase from 2800 hectare in 2015-16 under paddy cultivation to 5824 hectare in 2019-20, due to construction and renovation of several irrigation canals (kuls).

#### **iii ) Other crops:**

Other crops grown in Reasi in kharif season are pulses, bajra, vegetables, fodder etc. bajra grown on an area of 477 hectare and pulses on 82 hectare.

### **Rabi crops:**

Rabi crops or winter crops are sown in month of October and November and harvested in April-May. In the rabi season main crops in the study area were mustard, wheat, vegetables, fodder etc. Total area under these crops are shown in the table above

#### **i ) Mustard:**

Mustard is dominant crop among non-food crops and is cultivated on 1194 hectare area i.e. around 94 percent of total non-food crops.

**ii ) Wheat:**

Next to maize wheat is the dominant crop of Reasi district, as shown in the table ( ) in 2015-16 wheat was cultivated on 14600 hectare of land. There had been shown an increase in land used under such cultivation during 2019-20, which is 15064 hectare. The percentage change is 3.14 per cent which is higher than maize.

**iii ) Other crops:**

The other crops of rabi season are, barley, vegetables, fodder etc are also cultivated on a sizable land in the study region.

**Size of Land Holdings:**

The size of land holding in Reasi district and the percentage change in number of holdings and area by size classes can be discussed below table.

Table No. (3.0) Number of Holdings and Area by Size Classes 2005-06, 2010-11 and 2015-16.

S.No	Years	Marginal (Upto 1 hectare)		Small (1 to 2 hectare)		Semi-medium (2-4 hectare)		Medium (4-10 hectare)		Large (10 & Above hectare)		All Classes	
		Number	Area	Number	Area	Number	Area	Number	Area	Number	Area	Number	Area
01	2005-06	25363	11620.61	11228	15121.56	8710	23299.42	2772	15094.99	136	1475.71	48209	66612.29
02	2010-11	28502	11456.50	8921	12722.06	3276	8481.06	410	2136.11	14	257.85	41123	35052.58
03	2015-16	31369	12047.80	6612	9096.65	2115	5574.80	311	1711.65	17	381.30	40424	28812.20

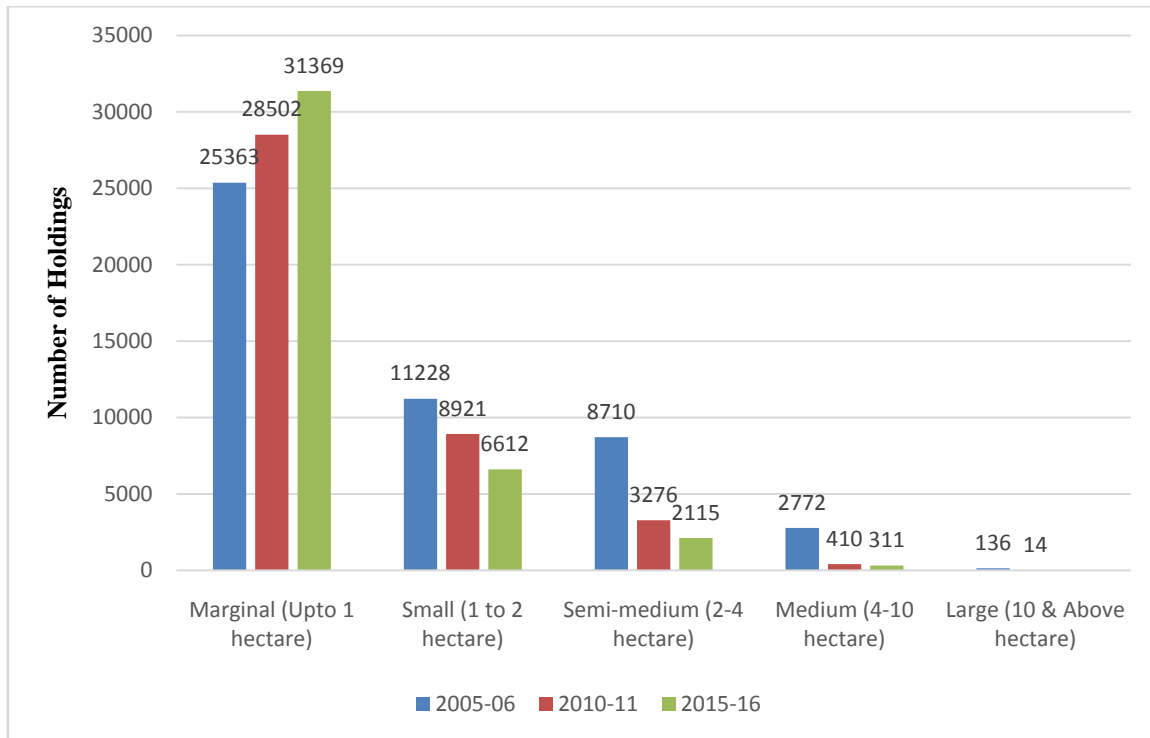
Source:- Agriculture Census 2015-16

Table No. (4.0) Percentage Change of Number of Holdings and Area by Size Classes 2005-06, and 2015-16.

S.No.	Land holdings classes	Area in hectare / Number 2005-06		Area in hectare / Number 2015-16		Percentage change	
		Number	Area	Number	Area	Number	Area
01	Marginal (upto 1 hectare)	25363	11620.61	31369	12047.80	23.68	3.68
02	Small (1 to 2 hectare)	11228	15121.56	6612	9096.65	-41.12	0.004
03	Semi-medium (2-4 hectare)	8710	23299.42	2115	5574.80	-75.72	-76.07
04	Medium (4-10 hectare)	2772	15094.99	311	1711.65	-88.78	-88.66
05	Large (10 & Above hectare)	136	1475.71	17	381.30	-87.5	-74.16
06	All Classes	48209	66612.29	40424	28812.20	-16.14	-56.75

Source:- Agriculture Census 2015-16

Figure (3.0) Land holding in study area.



The data in above table indicate that significant variations in the land holding of Reasi district. The data indicate that during the period of 2005-06 to 2015-16, there is an increasing in marginal (up to 1 hectare) of land holding category. Which is identified both in number of holdings i.e. 25363 in 2005-06, 28502 in 2010-11, and 31369 in 2015-16. This shows a sharp percentage change of about 23.68 percent of land holding during the study period. Similarly an increase has also been shown in area in hectare in this category that is 3.4 per cent. However, despite that sharp increase all other categories shown in table (04) manifest negative percentage change, both, in number and area. Percentage change in category small (1 to 2 hectare) in area is 0.004 percent only positive after marginal category, and -41.12 percent in number. Area under semi-medium category also show negative percentage change that is -75.72 percent, and -76.01 percent in number holding. However, despite all that under medium category negative percentage change is high above all categories which is -88.78 in number holding and -88.66 in area. And under category large (10 & above hectare) percentage change in area in hectare is -87.5 percent and -74.16 percent in number.

### Conclusion:

It can be concluded from the result that the present study analyse, that maize was the first rank crop, during the study period and about 46 percent area out of total cropped area was under maize. But during the study period negative growth has been found in cultivable area under maize. Wheat has been found the second rank crop cultivated in the study with increasing trends. The study also finds that out of total geographical area, area under forest was 45 percent and under cropped are was 26 percent. The study also evaluate the notable variation in land holding in Reasi district of Jammu and Kashmir from 2005-06 to 2015-



16. The results shown during study period that only positive change has been found in marginal land holding category, and other classes had shown negative change.

**References:**

1. Agricultural census 2015-16: Directorate Of Economics & Statistics, J&K.
2. Ahanger, J.A., (2018): Tourism and Insurgency in Kashmir: Challenges and way forward, Research J. Humanities and Social Sciences, A&V Publications, 9(3):477-479.
3. Digest Statics (2019-20): Government of Jammu and Kashmir Finance Department Directorate of Economics and Statistics.
4. Economic census (2016-17 and 2020-21): Directorate of Economics & Statistics, Jammu & Kashmir.
5. Economic survey (2008-09): Directorate of Economics & Statistics, J&K
6. Finance commission (Rev2017-18): Directorate Of Economics & Statistics, J&K
7. Hussain, Majid (2000): Systematic Geography of Jammu and Kashmir, Rawat Publication, Jaipur & New Delhi, pp. 47.
8. Regional digest Jammu (2015-16): Government of Jammu and Kashmir Finance Department Directorate of Economics and Statistics.
9. Vyas VS. Diversification in Agriculture: Concept, Rationale and Approaches. Indian Journal of Agriculture Economics 1996; 51(4).