

# Productivity analysis of crops grown under different farming systems of Kashmir

AJAZ A. SHAH\*, MIR SHOWKAT, SHABEER A. RATHER, T. HUSSAIN AND R. THAPLOO  
Department of Agriculture Production, Government of Jammu and Kashmir, PULWAMA (J&K) INDIA

## ABSTRACT

This study examined the production and productivity of various crops grown in different farming systems in district Pulwama of Kashmir valley, as a case study. Data for the study were collected from farm households surveyed across the study area while the trends in area and productivity levels of various crops were used to analyze data. The agro-ecological conditions of the area have the potential for cultivating fruits and vegetables together with cereals which keep diversity in cropping system and make balance in agro-ecosystem. Results indicated that the 14 per cent area was decline from last two decades (1989-2009). The average yield of rice was 50 quintals/ha, maize 28.54 quintals/ha, mustard 8 quintals/ha, pea (green pods) 80 quintals/ha and potato 152.41 quintals/ha were recorded in the study area. The study further recommends that the extension services should strengthen in the area with improved technologies to boost the production level of overall crops.

**Key words :** Productivity, Farming system

## INTRODUCTION

Agriculture is the main stay of the national economy, and about 70 per cent of the population derives its livelihood from the agriculture and related sectors. In Jammu and Kashmir state 80 per cent population is dependent on agriculture as main source of livelihood (Nehvi and Wani, 2008). The net cropped area has been decreasing, due to urbanization, industrialization and reprioritization of agricultural crops due to changing food habits, market prices, globalization and increased human population needing better housing and living standards (Tomar *et al.*, 2006). Thus, resulting in overall decline in cropped area and crop production as well and the possibility of getting additional land under cultivation is very remote. This stresses a need to produce more from less land. Therefore, the only alternative is to increase crop productivity and put together with more optimal utilization of natural resources (Singh, 2001).

Agriculture development largely depends on the improved technology used by the farmers. Low production and productivity of various crops grown under the conditions of Kashmir valley are due to non-adoption of improved technologies in the farming practices. Various crops grown under varied conditions, since by increasing the productivity of crops in the valley, can restore food security to a greater extent. The agro-ecological conditions are quite feasible for enhancing and diversifying livelihood options through cultivating cash generating crops like vegetables, spices, fruits etc. Cultivating these crops not only restores environment but pave a way for food security.

In an economy where resources are scarce and

opportunities for improved technology are lacking, productivity estimates will be able to show that, there are possibilities of raising productivity by improving efficiency without increasing resource base or developing improved technology. It could be said that the productivity efficiency for crop production is still low, for below expectations. In the light of the foregoing, this study therefore, examined the productivity of various crops grown in agriculture sub-division Tral as a case study. The issues of determining crop productivity are crucial. Therefore, food security issues are becoming a prime concern, so the study was undertaken to discuss the productivity and production of various crops grown under different farming systems of Kashmir.

## MATERIALS AND METHODS

The present study area is located in South Kashmir of J & K state. In district Pulwama, Agriculture sub-division Tral was selected purposively, as the investigators are working in the Department of Agriculture Production in the same area. The Agriculture sub-division Tral is spread over an area of about one thousand square kilometers. Ten villages were selected for the study, since the villages have maximum area under agricultural crops. Primary data were gathered from 80 farmers through well structured interview schedule and the secondary data were collected from district statistical and evaluation officer, Pulwama.

## RESULTS AND DISCUSSION

The results obtained from the present study as well as relevant discussion have been presented under

\* Author for correspondence.

following heads:

#### Land use pattern:

The data depicted in Table 1 revealed that land use pattern in the villages of Agriculture sub-division Tral from 1989-2009. From the last two decades, the total cropped area of the sampled villages decreased as it was 2696.69 hectares in 1989 and 2319 hectares in 2009 with a decline of about 14 per cent. Similarly irrigated land has gone down from 1895.17 hectares in 1989 to 1378.46 hectares in 2009 with a decline of 27.26 per cent. Drastic changes in land use pattern as decreased in cropped area and irrigated land due to urbanization. As population graph increased tremendously, the insecurity in food staples increased too. Therefore, the farmer's should opt farming systems like subsistence farming of cultivation of vegetables, fruits, cereals and other cash generating crops.

#### Production and productivity:

From data analysis, the production and productivity of various crops were found low (Table 2). In general, the total production of rice in the selected ten villages was obtained 45550 quintals, maize 3030 quintals, oilseeds 4928 quintals, pea (green pods) 4560 quintals and potato 9945 quintals. The productivity of crops was insufficient as compared to national average. A vast land of agriculture was devoted under the horticultural crops by the farmers to enhance their socio-economic status. The average yield of paddy and mustard was better to extent, but the average yield of other crops like maize, pea and potato was recorded much lower than the regional average. The issues of cereal crops and cash generating crops got a momentum when the concept of green revolution launched in India. A vast agricultural land was devoted under the crops of paddy, wheat, maize, pulses and oilseeds with successive use of fertilizers and high yielding varieties. But after the green revolution no such

**Table 1 : Land use (ha) in selected villages of agriculture sub-division Tral**

Villages	Geographical area (ha)	Cropped area (ha)		Irrigated area (ha)	
		1989	2009	1989	2009
Amlar	272.76	160.53	135.27	137.34	110.54
Dadasara	282.47	238.85	205.34	232.17	181.37
Noorpora	729.78	688.24	632.41	561.37	446.31
Amirabad	168.76	153.32	141.47	126.54	110.37
Nowdal	100.70	87.25	54.20	57.23	50.20
Shahabad	211.25	188.33	134.60	78.93	57.41
Midoora	850.25	829.47	710.80	424.18	180.21
Gamraj	125.05	114.52	98.64	96.26	81.43
Arigam	114.53	106.36	101.07	93.86	82.30
Kuchmulla	148.02	129.82	105.20	87.29	78.32
Total	3003.67	2696.69	2319.00	1895.17	1378.46

**Table 2 : Production of various crops in selected villages of Agriculture sub-division, Tral (2008-09)**

Villages	Total cropped area (ha)	Production (quintals)				
		Rice	Maize	Mustard	Peas	Potato
Amlar	135.27	3350	210	432	320	360
Dadasara	205.34	5750	360	744	400	1980
Noorpora	632.41	17900	750	1344	1920	2520
Amirabad	141.47	3150	180	360	640	1800
Nowdal	54.20	1400	180	168	40	90
Shahabad	134.60	1750	260	216	40	135
Midoora	710.80	4400	600	752	560	1260
Gamraj	98.64	2800	60	304	240	720
Arigam	101.07	2700	210	328	240	540
Kuchmulla	105.20	2350	240	280	160	540
Total	2319.00	45550	3030	4928	4560	9945

**Table 3 : Production and productivity of various crops in selected villages of Agriculture sub-division, Tral (2008-09)**

Crop	Area (ha)	Production (q)	Productivity (q/ha)
Rice	911	45550	50
Maize	106	3030	28.54
Mustard	616	4928	08
Peas	57	4560	80
Potato	65.25	9945	152.41

initiatives were taken by any agency to enhance the production level of various crops to ensure security for people of Kashmir valley.

Table 3 shows productivity level of various crops grown in the selected villages in the year 2008-09. The average yield of paddy was recorded 50 quintals /ha, maize 28.54 quintals /ha, mustard 8 quintals /ha, peas (green pods) 80 quintals /ha and potato 154.41 quintals /ha. The trend of growing traditional cereal crops and oilseeds was quite popular in valley but with the introduction of high yielding varieties and cash generating crops the lifestyle of the farmers has transformed in an optimistic way and they became self reliant in food grains. Cultivation of cereals is more sustenance for livelihood and the cash generating crops have more potential to enhance livelihood (Fakayode *et al.*, 2008).

### Conclusion:

It can be concluded that enhancing the productivity and overall production of crops, including water

harvesting, cultivation of commercial crops, rearing of animals etc together with cultivating traditional crops like paddy, oilseeds and maize will serve the regional economy in a better way and will provide food security. In addition, relevant extension agencies should share the improved technologies and skills for package of practices to the farmers in the area. This will help farmers to use their efficiency in a better way to cope up the challenges that prevails at present in the farms.

### REFERENCES

- Fakayode, S.B., Ige, R.K. and Osanaiye, R.M. (2008).** Productivity analysis of low land rice production system in Kogi state, Nigeria. *Green Frmg.*, **2** (1): 8-11
- Nehvi, F.A. and Wani, G. M. (2008).** Transfer of technologies for maize production and their impact under actual farm situations. *Agric. Ext. Rev.*, **21** (1): 42-46
- Singh, B. (2001).** Integrated approach for sustainable agriculture development; a case study. *Indian Res. J. Ext. Edu.*, **1** (1):1-7
- Tomar, R.K., Sahoo, R.N., Gupta, V.K., Garg, R.N., Chakraborty, D., Kalra, N. and Dwivedi, B.S. (2006).** Assessment of land use and land cover changes using remote sensing and geographical system; a case study. *Agric. Ext. Rev.*, **18** (1): 15-18

---

*Received : September, 2009; Revised : March, 2010*  
*Accepted : May, 2010*