

Shift in Cropping Pattern of Food and Non-Food Crops in Jammu and Kashmir State (1981-2011)

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Abstract: The present paper focus on shift in cropping pattern of food and non-food crops in Jammu and Kashmir State (1981-2011). In this paper, structural change from food to non-food crops has been investigated through the technique of Structural Change Index (SCI). It has been depicted clearly that a mild shift has taken place from food to non-food crops in the state economy during the period of analysis.

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Introduction

By cropping pattern is meant the proportion of area under different crops at a point of time. A change or shift in the cropping pattern implies a change in the proportion of area under different crops which depends to a large extent on the facilities available to raise crops in the given agro-climatic setting. Further, the development of marketing infrastructure and the demand pattern of the people also factors which affect cropping pattern. As such cropping pattern plays a vital role in determining the level of agricultural production and reflects the agricultural development or otherwise of an area.

It is to be noted here that the cropping pattern in the plain areas of the country is considered to be more elastic than in the hilly areas. This is largely because of the topography and agro-climatic conditions which vary drastically in the hilly regions. This is more so in the case of a state like Jammu and Kashmir. Land being costly and a scarce input in agriculture; the case for its efficient use is self evident.

The structural change in Cropping Pattern of Food and Non-Food Crops in Jammu and Kashmir State states the percentage change in gross cropped area of food and non-food crops over a period of time.

Objectives

1. To examine whether any structural shift has taken place in cropping pattern of food and non-food crops in J&K economy.
2. To identify the causes of structural shift in cropping pattern of food and non-food crops in J&K economy.

Data and Methods

The study is based on secondary data. The data has been collected from various secondary sources such as:

1. Ministry of Agriculture, Government of India, New Delhi.
2. Directorate of Economics and Statistics, Government of Jammu and Kashmir, various Issues.
3. Office of Financial Commissioner, Government of Jammu and Kashmir

Method

The structural change in Cropping Pattern of Food and Non-Food Crops in Jammu and Kashmir State states the percentage change in gross cropped area of food and non-food crops over a period of time.

A commonly used method of measuring structural change in Cropping Pattern of Food and Non-Food Crops is the rate or coefficient of (compositional) structural change, often referred to as a SCI. The SCI for area of food and non food crops may be defined as half the sum of the absolute magnitude of gross cropped area of the differences in food and non-food crops area shares over time. The calculation is given by the formula:

$$SCI = \frac{1}{2} \sum |x_{i(t)} - x_{i(t-1)}|$$

Where $x_{i(t)}$ and $x_{i(t-1)}$ represent each the percentage share of gross cropped area under food or non-food cropped area at time (t) and (t-1), respectively. The use of absolute values ensures that positive and negative changes in area shares do not cancel each other out when the values are summed across crops. The SCI is bounded between zero and 100, with zero representing no structural change while 100 indicates a complete reversal of structure change.

Table 1: depicts that food grains production in the state has increased marginally during the last three decades. From 1.31 crores Quintals in 1980-81, it has gone up to 1.52 crores Quintals in 2010-11. The production of Rice & Wheat have increased during the first & the last decade, but the increase in case of wheat is more rapid as compared to increase in rice

whereas their production have decreased during the second decade, but the decrease in terms of wheat is more rapid. The production of maize has increased gradually during the reference time period, except the

first decade. Pulses & Other Cereals & Millets have continuously decreased, but pulses decreases more rapidly than Other Cereals & Millets.

Table 1: Cropping Pattern of J&K Economy (1981-2011)

Production, Area and Productivity of Food Grains in Jammu and Kashmir State						
Production (Quantity produced in 000 Qtls.)						
Year	Rice	Wheat	Maize	Other Cereals & Millets	Pulses	Total Food Crops
1980-81	5464 (41.82)	2047 (15.67)	4933 (37.75)	285 (2.18)	337 (2.58)	13066
1990-91	5769 (42.22)	2974 (21.77)	4440 (32.49)	213 (1.56)	268 (1.96)	13664
2000-01	4153 (37.09)	1487 (13.28)	5258 (46.96)	170 (1.53)	128 (1.14)	11196
2010-11	5077 (33.36)	4463 (29.33)	5277 (34.68)	231 (1.52)	169 (1.11)	15217
Area (in 000 hectares)						
Year	Rice	Wheat	Maize	Other Cereals & Millets	Pulses	Total Food Crops
1980-81	264.58 (32.69)	201.98 (24.96)	275.19 (34.01)	100.2 (10.29)	48.6 (6.01)	809.26
1990-91	274.49 (28.73)	245.12 (25.65)	294.9 (30.86)	99.7 (10.43)	41.32 (4.32)	955.53
2000-01	244.059 (24.59)	280.96 (28.31)	330.21 (33.27)	109.78 (11.06)	27.45 (2.77)	992.45
2010-11	261.35 (25.66)	290.72 (28.55)	308.22 (30.27)	129.16 (12.68)	28.91 (2.84)	1018.36
Productivity /Yield of Food Crops (Qtls. Per hectare)						
Year	Rice	Wheat	Maize	Other Cereals & Millets	Pulses	Total Food Crops
1980-81	20.65	10.13	17.93	15.07	6.93	16.15
1990-91	21.02	12.13	15.06	2.14	6.49	14.3
2000-01	17.02	5.29	15.92	1.55	4.66	11.28
2010-11	19.43	15.35	17.12	1.79	5.85	14.94

Source:

- 1) Ministry of Agriculture, Government of India, New Delhi.
- 2) Directorate of Economics and Statistics, Government of Jammu & Kashmir, various Issues.
- 3) Office of Financial Commissioner, Government of Jammu and Kashmir.

Figures in parentheses indicate percentages

The area under food grains has increased from 8 lack hectare in 1980-81 to 10 lack hectares in 2010-11. Area Under rice has increased during the first and the last decade whereas the Area under maize, wheat and Other Cereals & Millets have increased steadily during the corresponding period. Area under pulses crops has decreased continuously.

Productivity of rice and wheat has increased during the first and the last decade of the reference

time period whereas the productivity of maize has increased during the second and the third decade. Areas under Other Cereals & Millets and pulses have decreased continuously, but decrease in the productivity of Other Cereals & Millets is highest among all the food grains. The productivity of maize and wheat in Kashmir division is low compared to Jammu. However; average yield of rice in Kashmir is high.

Table 2: Structural change index of cropping pattern of food & non-food crops

Crops/Years	1980-81	2010-11	Change in %pt.	SCI
Rice	27.17	22.93	-4.24	1.05
Wheat	20.74	25.51	4.77	
Maize	28.26	27.04	-1.22	
Other Cereals & Millets	10.29	11.33	1.04	
Pulses	4.98	2.54	-2.44	
Total Food Crops	91.44	89.35	-2.1	
Oilseeds	5.42	5.66	0.24	
Fibres	0.16	0.02	-0.14	
Dyes & tanning material	0.02	0.24	0.22	
Drugs narcotics & plantation crops	0.1	0.01	-0.09	
Fodder crops	2.56	1.91	-0.65	
Other non-food crops	0.3	2.82	2.52	
Total non-food crops	8.56	10.66	2.1	
Total				2.1

Source: based on Table 1

The Table 2 depicts that Structural change index of Cropping Pattern of Food & Non-Food Crops in respect of (Percent of Gross Cropped Area) is 2.10 (see last column). This suggests that over the thirty year period from 1980-81 to 2010-11, 2.10% of the Gross Cropped Area resources were shifted from Food Crops to non-food crops

Conclusion

The analysis indicates that on relative basis the area allocation towards the oilseeds, dyes and tanning material and other non-food crops has increased from 5.42, 0.02 and 0.3 per cent of the gross cropped area in 1980-81 to 5.66, 0.22 and 2.82 per cent respectively in 2010-11. These changes might have taken place due to the positive response of commodities to their prices. However, this hypothesis could not be put to analysis because of non-availability of data on prices of these commodities.

These changes signify that there has been a diversion from cereal economy to market economy which is a very healthy sign for the development of agricultural sector of the state economy.

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