

A CASE STUDY :

# Inter-decadal changes in cropping pattern and relative shifts in favour of superior crops in Rajasthan

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**SUMMARY :** Relative position of various crops over time in the cropping pattern of the state, bajra ranked first followed by wheat, rapeseed and mustard, gram and maize. Among the cereals, bajra and wheat dominated the cropping pattern in both pre and post green revolution period. Gram dominated among the pulses as it covers about 50 per cent of total area under pulses in the state. Oilseeds accounts about two third of total area under non-food grain crops.

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KEY WORDS :

Cropping pattern, Cereals, Oilseeds, Non-food grain

## BACKGROUND AND OBJECTIVES

Rajasthan is the second largest state of India with a geographic area of 3.4224 lakh sq.km. It represents 10.41 per cent land area of the country. The state sprawls over the major part of north-west India between 23°30' and 30°12' north latitude, and 69°30' and 78°17' east longitude. The western and northern boundaries of the state touch the international boundary with Pakistan. In the north, it is bounded by Punjab and Haryana, in the north-east by Uttar Pradesh, in the south-east by Madhya Pradesh and in the south-west by Gujarat state.

Cropping patterns are affected by a multiplicity of factors, of which the resource base is one. Within the resource base, soil types and irrigation facilities play the most important roles. These basic resources, together with the availability of crop varieties, market infrastructure and relative prices set the broad limits within which the potential cropping pattern of an area are determined.

Over time analysis of agricultural development shows that there has been extension of irrigation facilities, level of fertilizer use, development of improved variety seed and changes in the price level of crops. There has also been a shift in the area from food crops to non-food crops, from inferior to superior crops and from low remunerative crops to more paying crops. All these factors also caused shift in the cropping pattern.

## RESOURCES AND METHODS

For study of the cropping pattern, all important crop groups and crops of the zone were selected. The important crop groups are cereals and pulses in the food-grains and oilseeds in the non-food-grains. From these crop groups, nine crops viz., wheat, barley, bajra, jowar and maize from cereals, gram from pulses and groundnut, sesamum and rapeseed and mustard from the oilseeds were selected.

Secondary data were used for the study of

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cropping pattern. Secondary data were collected from various Government reports. Directorate of Economics and Statistics and Agricultural Census Department, Government of Rajasthan were the main source for secondary data. Data were collected for the period from 1956-57 *i.e.* from the year of formation of Rajasthan state till 2006-09. Changes in the cropping pattern were analyzed at six points of time. These being the averages of 1956-57 to 1958-59, 1966-67 to 1968-69, 1976-77 to 1978-79, 1986-87 to 1988-89, 1996-97 to 1998-99 and 2006-07 to 2008-09. Since any year in question may be an abnormal year, three yearly averages were utilized in the study.

## RESOURCES AND METHODS

The changes in the cropping pattern of Rajasthan state over a period of last 54 years are presented. This has been examined by dividing the study period into six points of time to know the inter decadal changes in cropping patterns as well as in relative shifts of area. The distribution of area under various crops and crop groups in the state of Rajasthan during the period 1956-57 to 2006-09 is presented in the Table 1.

It is evident that the area under food grains declined from 89.75 per cent of the total cropped area of the state in 1956-59 to 60.25 per cent in 2006-09. As against this, the

relative contribution of non-food grains increased during the period from 10.25 per cent to 39.75 per cent. Among the food grains both area under cereals and pulses had shown decrease. Among the individual cereals, area under wheat increased from 10.15 per cent of total cropped area in 1956-59 to 10.87 per cent in 2006-09. As against this, area under barley decreased from 4.60 per cent in 1956-59 to 1.07 per cent in 2006-09.

The increase in area under wheat in the post green revolution period has been there due to the decrease in area under barley and extension of cultivation of wheat on additional land brought under plough due to reduction of cultivable waste land and increase in irrigation facilities. Among the *Kharif* season crops, the relative area under jowar and bajra declined but maize remained almost constant.

Among the pulses, area under gram declines throughout the period from 12.23 per cent of total cropped area in 1956-59 to 5.27 per cent in 2006-09. As against this the relative area under both *Kharif* and *Rabi* season, pulses remained constant up to 1966-69 and decreased thereafter.

Though the relative contribution of non-food groups increased over time. The increase in the area under non-food grains was there due to the increase in area under oilseeds and other non-food grains. Among oilseeds area under groundnut, rapeseed and mustard and other oilseeds increased but area under sesame decreased from 3.98 per cent in 1956-

**Table 1 : Cropping pattern in Rajasthan state (percentage of total cropped area)**

Crop groups/crops	Period (average)					
	1956-59	1966-69	1976-79	1986-89	1996-99	2006-09
I Food grains	89.75	89.10	77.06	74.92	66.66	60.25
<b>Cereals</b>	62.11	64.75	52.06	57.70	45.40	43.53
Wheat	10.15	08.60	11.83	11.14	13.20	10.87
Barley	04.60	04.03	03.08	01.64	01.11	1.07
Bajra	32.85	36.75	25.71	31.54	22.62	23.26
Jowar	08.48	08.26	05.03	06.56	02.86	2.84
Maize	04.70	05.80	04.88	05.78	04.73	4.87
Other cereals	01.33	01.31	01.53	01.04	00.88	0.62
<b>Pulses</b>	27.64	24.35	25.00	17.22	21.26	16.72
Gram	12.23	08.74	11.33	07.34	10.90	5.27
Other pulses of <i>Rabi</i> and <i>Kharif</i>	15.41	15.61	13.67	09.88	10.36	11.45
II Non-food grains	10.25	10.90	22.94	25.08	33.34	39.75
<b>Oilseeds</b>	08.00	08.72	06.72	12.33	20.97	22.17
Groundnut	00.58	01.97	01.82	01.44	01.50	1.43
Sesamum	03.98	04.88	02.45	01.90	01.55	1.85
Rapeseed and mustard	02.40	01.45	01.87	06.98	12.90	14.2
Other oilseeds	01.04	00.42	00.58	02.01	05.02	4.69
<b>Other non-food-grains</b>	02.25	02.18	16.22	12.75	12.37	17.58
III Total cropped area	100.00	100.00	100.00	100.00	100.00	100.00

Source: 1. Vital Agriculture statistics 1995-96, 1996-97, 1997-98, 1998-99, 2009-10 Directorate of Agriculture, Govt. of Rajasthan.  
2. 50 years of Agricultural Development in Rajasthan, 1999, Directorate of Agriculture, Govt. of Rajasthan.

59 to 1.85 per cent in 2006-09

The relative area under rapeseed and mustard increased from 2.40 per cent in 1956-59 to 14.20 per cent in 2006-09 and area under groundnut from 00.58 per cent to 1.43 per cent during the same period. Thus, it can be said that area under rapeseed and mustard and groundnut recorded significant increase in the zone. Relative share of oilseeds as a group in the cropping pattern is also increased significantly. Rapeseed and mustard is the most important oilseed crop of the state as it occupies about 64.08 per cent of the total oilseeds area. Similarly Ray *et al.* (1985) studied impact of changes in cropping pattern on farm income – A temporal and spatial analysis.

#### Conclusion :

The relative area under food grains decreased and that under non-food grain crops increased. Among the food grains, area under wheat increased significantly as against the decrease of area under barley, jowar and bajra and more so in the post green revolution period. The relative share of pulses in the cropping pattern of the state decreased in spite of all efforts of Government to boost up their area and production, but relative share of oilseeds as a group in cropping pattern increased significantly. Relative position

of various crops over time in the cropping pattern of the state, bajra ranked first followed by wheat, rapeseed and mustard, gram and maize. Among the cereals, bajra and wheat dominated the cropping pattern in both pre and post green revolution period. Gram dominated among the pulses as it covers about 50 per cent of total area under pulses in the state. Oilseeds accounts about two third of total area under non-food grain crops.

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