



Review Of Research



TREND AND PATTERN OF OILSEEDS IN RAJASTHAN: AN AGRO-CLIMATIC ZONES STUDY

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ABSTRACT :

The present study discovers the changes in the oilseeds pattern during post liberalization period in the state of Rajasthan. To study the dynamics of the spatio-temporal changes in the pattern of oilseeds and to analyze temporal and inter agro-climatic region wise variations in oilseeds in Rajasthan during post-liberalization periods. The analysis of oilseeds pattern has been done with reference to 1991-94 and 2010-13. It is based on secondary data obtained from Agricultural Statistics of Rajasthan, Planning Department, Directorate of Economics and Statistics, Rajasthan and 50 years Agriculture Statistics of Rajasthan, DES, Jaipur, Rajasthan. The state has well identified ten agro-climatic zones. Rapeseed & Mustard are main constituents of oilseeds pattern. Rapeseed & Mustard accounted for about half of the total oilseeds area followed by sesamum. In arid western plain, the proportion of sesamum and rapeseed & mustard oilseed crop declined sharply. Rapeseed & mustard continued as a dominant crop during this period and occupied about nine-tenth of the total oilseeds area in Irrigated North Western Plain and Flood Prone Eastern Plain. In the Hyper Arid Partial Irrigated Zone of the state rapeseeds and mustard and groundnut formed the pattern of oilseeds over the period 1991-94 to 2010-13. There are three mountain tract regions in the state, these region going towards more diversified pattern of oilseeds. In 2010-13 Transitional Plain of Luni Basin had castorseed emerging as a major oilseed crop. In Semi-Arid Eastern Plain, rapeseed and mustard is remain stagnant and dominate in the position of oilseed crops. It is evident that south and southeastern parts of is emerged as a soya region in term of oilseeds.

KEYWORDS: oilseeds, Agro-climatic, regional, rapeseed and mustard.

INTRODUCTION

On the oilseeds map of the world, India occupies a prominent position, both in regard to acreage and production. India contributes about 10 percent of the world oilseeds production, 6-7% of the global production of vegetable oil and protein meal and is the 4th largest edible oil economy in the world (Roy et. al. 2016). India is the fourth leading oilseeds producing country in the world, next only to the USA, China, and Brazil, harvesting about 29 million tonnes of oilseeds per annum, grown in an area of nearly 27 Mha with an annual average yield of 1058 kg/ha. Oilseeds sector have an annual turnover of about ` 80000 crores which subjugate a vital position in the agrarian economy of the country. Oilseeds are significant following only to food grains in terms of area and production. India accounted for 19% of oilseeds area, and 2.7% of oilseeds production in the world, (FAOSTAT, 2013).

The Oilseeds sector has been one of the most dynamic components of world agriculture. The contribution of agricultural sector to GDP has continued to decline over the years while that of other sectors (particularly services) has increased. In 1971-72, agriculture and allied sectors contributed about 41 per cent of the GDP, which decline to 28.2 per cent and 13.7 percent (at 2004-05 prices) in 1993-94 and 2012-13, respectively (CSO, 2013).

India is one of the most oilseed producing countries of the world. About 10% of the total production of oilseeds of world is produced by India. As far as production of vegetable oil is concerned, India contributes 6.7% to the global production of vegetable oil. Oilseed crops occupy 14.9% of the gross cropped area in the country. The contribution of oilseeds in total value of output was estimated to 9.7% in TE 2009-10. It shows that oilseeds are generally sown in different agro-climatic regions of the country.

Rapeseed-mustard is the major source of income especially even to the marginal and small farmers in rainfed areas. Since these crops are cultivated mainly in the rain-fed and resource scarce regions of the country, their contribution to livelihood security of the small and marginal farmers in these regions is also very important. By increasing the domestic production substantial import substitution can be achieved. Due to its low water requirement (80-240 mm), rapeseed-mustard crops fit well in the rainfed cropping system. There is dominance of rain fed agriculture in state. Due to scarcity of groundwater resources and vagaries of monsoon agriculture of state is more vulnerable to climatic variability.

The cropping pattern has changed over the last four decades as a result of development of irrigation potential, production technology, increased market prices and industrial demand in the state. Tables 3.1 and 3.2 show the nature of shift or changes in cropping pattern in the state. It is evident that the share of oilseeds has increased significantly, while the share of total cereals, total pulses and total food grains has decreased over last four decades. There has been very high growth in area under rapeseed-mustard (R&M) and soybean while the growth in area under groundnut and cotton has been moderate in the state.

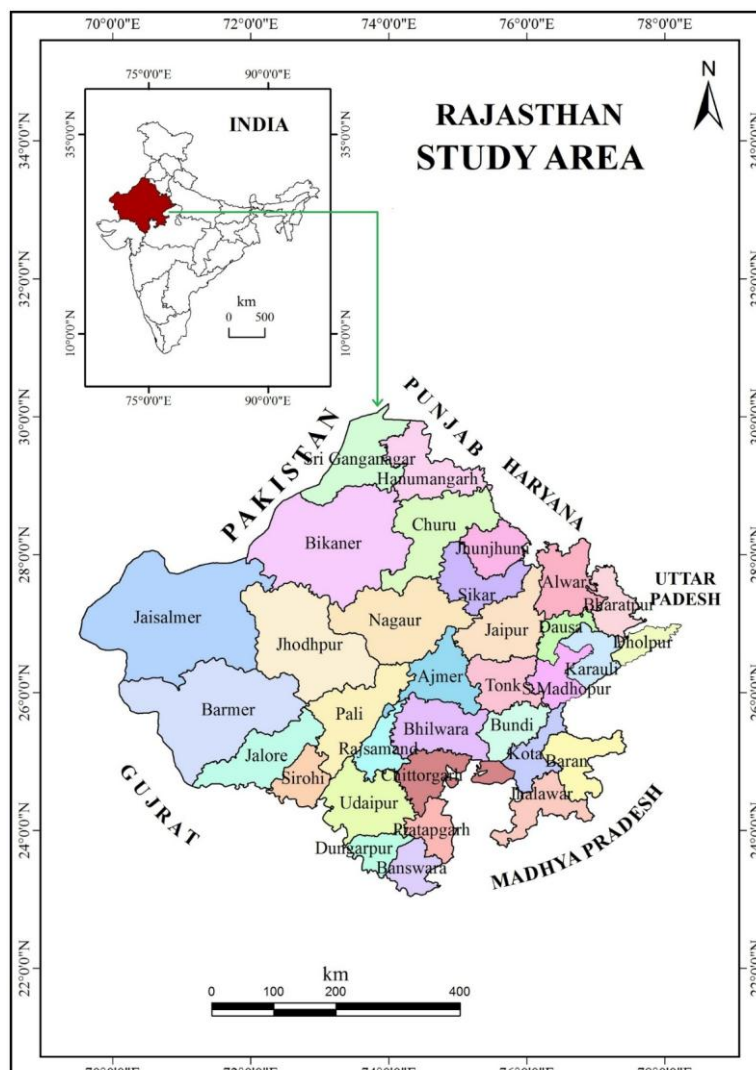
The major crops grown in different parts of Rajasthan are bajra, wheat, jowar, maize, cotton, rapeseed-mustard, groundnut, moth, gram and horticultural crops. The state of Rajasthan plays a prominent role in oilseeds production in India. Among the oilseeds, rapeseed-mustard, sesamum, soyabean and groundnut are the major oilseed crops of the State. Groundnut and soybean are the major Kharif crops largely dependent on rainfall conditions while rapeseed-mustard and taramira are important Rabi crops grown in the majority districts of Rajasthan.

STUDY AREA

The state of Rajasthan is located in the north-west of part of the country. It's geographical location is between 23° 3' to 30° 12' North latitude and 69° 30' to 78° 17' East longitude with the tropic of cancer passing through the southernmost tip of the state. The state came into existence on November 1, 1956 by the reorganization 19 princely states, varied in size, administrative efficiency and socio-economic development. The state now has divided into 33 districts for administrative purposes. It is known as India's desert state since 61 percent of its area, covering 11 districts inhabited by 40 percent of the population, is either desert or semi-desert (the Thar) has made the state vulnerable to droughts and famines.

Rajasthan is the largest state of India covering an area of 342,239 square kilometres. It constitutes 10.4 percent of the total geographical area of the country. It is bounded on the west and north-west by Pakistan, on the north and north-east by Punjab, Haryana and Uttar Pradesh, on the east and south-east by Uttar Pradesh and Madhya Pradesh and on the south-west by Gujarat. It is the largest State in terms of area (342.24 thousand sq. km) but only 8th in terms of population. Its total population in 2011 is 6.86 crore (Census, 2011 Provisional data) in 2011.

The state has well identified 10 agro-climatic zones. The state is endowed with diverse soil and weather conditions comprising of several agro-climatic situations, warm humid in south- eastern parts to dry cool in western parts of the state. Though a large percentage of the total area



is desert with little forest cover, Rajasthan has a rich and varied flora and fauna. The state enjoys a strategic geographical position wherein it is situated between Northern and Western growth hubs in the country and 40 per cent of Delhi Mumbai Industrial Corridor (DMIC) runs through it.

OBJECTIVES

- To study the dynamics of the spatio-temporal changes in the pattern of oilseeds in Rajasthan during post-liberalization periods.
- To analyze temporal and inter agro-climatic regionwise variations in oilseeds in Rajasthan during post-liberalization periods.

TIME FRAME OF THE STUDY

The present study seeks to understand the pattern and change in the oilseeds pattern with reference to the trienniums 1991-94 and 2010-13. The triennium 1991-94 has been selected as it pertains to the period when economic liberalization was initiated in the country. The other triennium 2010-13 is the latest period for which data was available.

MATERIAL AND METHODOLOGY

Present study is based on secondary source of data. It uses district level data on area under different crops and total cropped area for the years 1991-92, 1992-93, 1993-94, 2010-11, 2011-12 and 2012-13. The

data have been collected from Agricultural Statistics of Rajasthan, Planning Department, Directorate of Economics and Statistics, Rajasthan and 50 years Agriculture Statistics of Rajasthan, DES, Jaipur, Rajasthan .

The triennium average of data has been computed for two time periods, i.e. 1991-94 and 2010-13 keeping in view that there are inter annual fluctuations in Monsoon rainfall and in Rajasthan almost every third year is a drought period. The triennium average of the figures presents normal picture of the period. Percentage share of different oilseed crops in total cropped area and within oilseeds crops also has been computed to depict proportionate strength in the oilseeds pattern. There were 10 agro-climatic zones in Rajasthan.

The temporal change in the strength of individual crops at the state level has been depicted by comparative bar diagram. Temporal change and spatial pattern of cropping has been portrayed with the help of pie diagram and choropleth technique. Similarly spatio-temporal changes in crop diversification at the district level have been shown using choropleth technique.

CROPPING PATTERN IN DIFFERENT AGRO- CLIMATIC REGION

There are 10 agro-climatic zones (Arid Western, Irrigated North Western, Hyper Arid Partial Irrigated Zone, Internal Drainage dry zone, Transitional Plain of Luni Basin, Semi-Arid Eastern plain, Flood Prone Eastern Plain, Sub humid Southern, Humid southern, Humid Southern Eastern Plain) identified by Directorate of Agriculture, Government of Rajasthan in the state. There are following ten agro- climatic regions have been identified.

- ✓ **IA-Arid Western Plain** (Barmer, Jodhpur)
- ✓ **IB-Irrigated North Western Plain** (Sri Ganganagar, Hanumangarh)
- ✓ **IC-Hyper Arid Partial Irrigated Zone** (Bikaner, Jaisalmer, Churu)
- ✓ **IIA-Internal Drainage Dry Zone** (Nagaur, Sikar, Jhunjhunu)
- ✓ **IIB-Transitional Plain of Luni Basin** (Jalore, Pali, Sirohi)
- ✓ **IIIA-Semi-Arid Eastern Plain** (Jaipur, Ajmer, Dausa Tonk)
- ✓ **IIIB-Flood Prone Eastern Plain** (Alwar, Dholpur, Bharatpur, S.Madhopur, Karauli)
- ✓ **IVA-Sub Humid Southern Plain and Aravallis** (Bhilwara, Rajsamand, Chittorgarh)
- ✓ **IVB-Humid Southern Plain** (Dungarpur, Udaipur, Banswara, Pratapgarh)
- ✓ **V-Humid South Eastern Plain** (Kota, Jhalawar, Bundi, Baran)

RESULTS

Fig. 1 and Table 1 shows that the percentage of area under oilseed crops in total cropped area since initiation of economic reforms during early 1990s. There was 18.32 percent of total cropped area under oilseed crops in 1990-91, which increased to 20.23 percent in 2010-13. The agro climatic region wise acreage of oilseed crops in the state during 1990-91, 2002-03 and 2015-16.

Table 1. Regionwise Acreage of Oilseeds in Rajasthan

Region	1991-94		2010-13	
	Area under Oilseeds	Share in TCA*	Area under Oilseeds	Share in TCA*
IA	155	5.52	293	8.76
IB	285	15.48	400	16.99
IC	76	2.89	316	7.53
II A	351	13.90	406	13.25
II B	443	26.05	566	28.58
III A	554	26.07	721	25.28
III B	844	42.26	866	35.76
IV A	254	21.57	249	18.85
IV B	28	3.28	167	14.43

V	522	34.69	1037	48.86
Rajasthan	3512	18.32	5021	20.23

Source: Agricultural statistics of Rajasthan

*Percentage area under Horticultural Crops to Total Cropped Area

In 1990-91, the highest acreage of oilseeds was found in Flood Prone Eastern Plain where these crops occupied more than two-fifth of total cropped area. Humid South Eastern Plain is another region, which accounts for more than one third of total cropped area. Besides these regions, Transitional Plain of Luni Basin, Semi-Arid Eastern Plain also a major role in oilseeds cultivation accounts for about 26 of total cropped area. About one-fifth of total cropped area has been found in Sub Humid Southern Plain and Aravallis region. Irrigated North Western Plain occupy 15 percent of total cropped area. Other regions are Arid Western Plain, Hyper Arid Partial Irrigated Zone and Humid Southern Plain. These regions are occupying less than 5 percent of total cropped area individually.

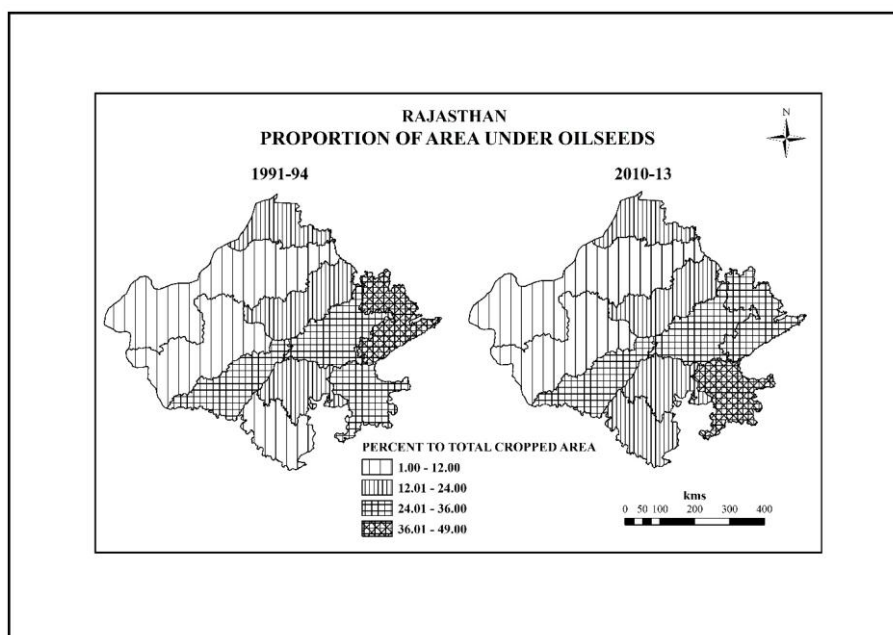


Figure 1

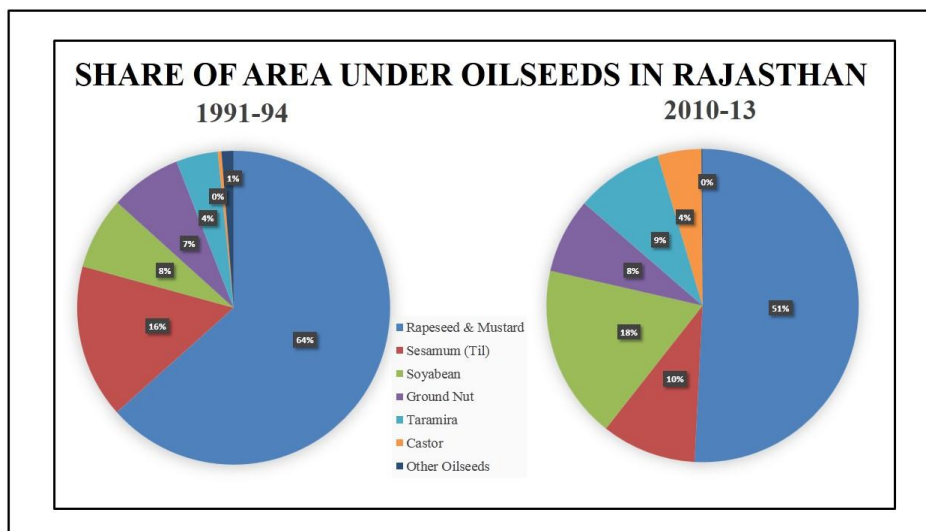
By 2002-03, Humid South Eastern Plain emerged as a leading oilseeds growing region in Haryana. About half of the total cropped area devoted to oilseed crops in this region. Another region of eastern part of the state, Flood Prone Eastern Plain ranked second in this regard having about 35.76 percent area under these crops. Transitional Plain of Luni Basin region ranked third (28.58 percent) in terms of oilseeds area followed by the regions of Semi-Arid Eastern Plain (25 percent), Sub Humid Southern Plain and Aravallis (18.85 percent) and Irrigated North Western Plain (16.99 percent). Humid Southern Plain and Internal Drainage Dry Zone has been found 14.43 percent and 13.25 percent of total cropped area. Beside this Arid Western Plain and Hyper Arid Partial Irrigated Zone regions devoted about 8 percent area to oilseed crops.

The Area under Different Oilseed Crops

The comparative pie diagram (Figure 2) shows that the area under different oilseed crops in Rajasthan during two trienniums i.e. 1991-94 and 2010-13. These oilseeds are such as total Rapeseed & Mustard, Sesamum, Soyabean, Ground Nut, Taramira, Castorseed, sunflower etc. The total oilseeds area was 3512 thousand hectares in 1991-94. It increased to 5021 thousand hectares in 2010-13. Despite the

substantial increase in the total oilseeds area, Rapeseed & Mustard are main constituents of oilseeds pattern. Rapeseed & Mustard accounted for about 63.41 percent of the total oilseeds area in 1991-94. Its proportion decreased to 50.82 percent in 2010-13. In 1991-94, about 15.84 percent of the total oilseeds area in the state devoted to sesamum. The acreage of sesamum decreased to 9.80 percent.

Figure 2



Among the oilseeds, maximum increase has been seen in the share of soyabean has increased from 7.42 per cent in 1991-94 to 17.94 per cent in 2010-13. During post reform period the area share of groundnut crops remain stagnant from 7.38 percent to 7.76 percent in the state. The share of total area under taramira crop in total oilseeds area has increased from 4.31 per cent in 1991-94 to 9.02 per cent in 2010-2013 in the state. It is interesting to note that the area under total castor seed has been increased in share in total oilseeds area. Area under castor seed increased from 0.38 percent of total oilseed area in 1991-94 to 4.52 percent in 2010-13. During post reform period the area share of other crops decreased over the study period.

AGRO- CLIMATIC ZONES

IA-Arid Western Plain

Figure 3 and table 2 reveals that sesamum is a dominant oilseed crop in arid western plain (Jodhpur, Barmer) of the state during 1991-94. It occupies more than half of total oilseeds area. Rapeseed and mustard is another major oilseeds, which accounts for more than two-fifth of total oilseeds area. Both these crops together occupy about 95 percent of total cropped area. Other oilseed crops are soyabean, groundnut, taramira and castor seed in this region. These crops are occupying less than 5 percent of total oilseeds area.

It is evident from figure 3 and table 3 that rapeseed & mustard emerged as a major crop of this region during 2010-13. It individually, accounts for about two-fifth of total oilseeds area. Castor seed and groundnut cultivation is also emerging oilseed crops in this region, these accounts for about one-fifth of total oilseeds area individually. Sesamum and taramira accounts for about 14.22 percent and 10.09 percent area respectively.

As a result, proportion of sesamum crop declined sharply in this region during 1991-94 to 2010-13. In the period 2010-13, castor seed, groundnut and taramira emerged as major oilseeds.

IB-Irrigated North Western Plain

It is evident from figure 3 table 2 during 1991-94 in irrigated north western plain of Rajasthan (Sri Ganganagar district) rapeseed & mustard was major oilseed crop in the total oilseeds area. This crops occupy

more than 85 percent of oilseeds area. It is followed by taramira, which occupy about 10 percent of oilseeds area. Rest of total cropped area other oilseed crops are grown in this region.

During 2010-13 (figure 3 table 3), in irrigated north western plain (Sri Ganganagar and Hanumangarh districts), rapeseed & mustard is continuously increasing, which occupies more than 90 percent of oilseeds area. Rapeseed & mustard cultivation is largely concentrated in this region because of uniform terrain, less varied soil and availability of canal irrigation. In this region, other oilseed crops are marginally grown here.

Table 2. Agro-Climatic Regionwise Area under Oilseeds in Rajasthan during 1991-94

Region	Rapeseed & Mustard	Sesamum	Soyabean	Groundnut	Taramira	Castor seed	Other Oilseeds
IA	38.82	56.71	0.00	0.18	3.80	0.45	0.05
IB	86.48	0.19	0.01	2.61	9.93	0.21	0.57
IC	44.80	16.54	0.00	33.31	5.21	0.02	0.11
II A	51.26	40.33	0.00	3.41	4.91	0.00	0.08
II B	57.48	37.88	0.00	0.62	1.28	2.63	0.12
III A	64.54	10.80	0.01	14.53	8.20	0.01	1.91
III B	89.08	2.91	0.01	3.63	4.13	0.01	0.23
IV A	28.18	13.92	23.17	31.66	1.56	0.01	1.49
IV B	39.10	18.30	10.33	26.02	4.15	0.52	1.59
V	49.77	4.04	38.11	2.48	0.94	0.00	4.66

Source: Agricultural statistics of Rajasthan

Table 3. Agro-Climatic Regionwise Area under Oilseeds in Rajasthan during 2010-13

Region	Rapeseed & Mustard	Sesamum	Soyabean	Groundnut	Taramira	Castor seed	Other Oilseeds
I A	31.00	14.22	0.00	20.18	10.09	24.50	0.00
I B	92.78	1.00	0.00	1.97	2.88	1.34	0.03
I C	42.61	4.27	0.00	45.26	4.70	1.75	1.42
II A	51.68	6.09	0.00	10.21	31.81	0.14	0.07
II B	25.89	26.81	0.00	2.46	19.68	25.16	0.00
III A	64.14	11.28	0.02	11.27	13.15	0.09	0.04
III B	90.39	7.30	0.29	1.02	0.97	0.01	0.01
IV A	34.88	14.84	22.31	11.05	16.80	0.06	0.04
IV B	13.81	3.26	78.55	2.35	1.73	0.24	0.06
V	23.53	6.68	68.64	0.26	0.84	0.00	0.05

Source: Agricultural statistics of Rajasthan

During 1991-94 to 2010-13, rapeseed & mustard growing area had increased over the period in this region whereas the area under all other oilseeds has been continuously losing their acreage.

IC-Hyper Arid Partial Irrigated Zone

It is evident from figure 3 rapeseed & mustard is an important oilseed crop in Hyper Arid Partial Irrigated Zone of the state during 1991-94. It occupies about 44 percent of total oilseeds area. Groundnut is another major crop, which accounts for more than 33 percent of oilseeds area. These two crops accounts for about three-fourth of oilseeds area. Sesamum is also a major oilseed crop of the region, which occupies about 16.54 percent of total oilseeds area. Taramira cultivation is also accounts for more than 5.21 percent of oilseeds area.

In 2010-13 (figure 3 and table 3), groundnut emerged as a dominant oilseed crop in this region, which occupies about 45 percent of total cropped area. Rapeseed & mustard is also major crops, which occupy more than 42 percent of total oilseeds area. These crops together account for about 90 percent of

oilseeds area. Taramira and sesamum occupy about 4 percent area individually. Rest of oilseed crops individually do not occupy even 2 percent of total cropped area.

The acreage under sesamum crop tends to decline very rapidly in western region. An improvement have been seen their proportionate area in term of groundnut crop.

IIA-Internal Drainage Dry Zone

Figure 3 table 2 shows that rapeseed & mustard is dominant oilseed crop in the region. It, individually, accounts for about half of oilseeds area. Sesamum is also an important oilseed crop, which occupy 40 percent of oilseeds area. Besides these crops, taramira and groundnut are the other oilseed crops, which individually occupy about 4 percent of oilseeds area of this region.

Figure 3 table 2 shows that 2010-13, in internal drainage dry zone of Rajasthan, rapeseed & mustard is the dominant oilseed crop, it occupies half of the oilseeds area in this period also. Taramira emerged as an important oilseed in this region, it occupy about one-third proportion of oilseeds area. Groundnut and seamum are the important oilseeds in term of this region, which occupy about 10 percent and 6 percent of total cropped area respectively.

IIB-Transitional Plain of Luni Basin

Only rapeseed and mustard cultivation occupied about three-fifth of total cropped area (figure 3 table 2). Another major oilseed crop is sesamum, accounts for 37 percent of oilseeds acreage. Only 2.6 percent of oilseeds area is devoted to castorseed cultivation. Taramira occupy 1.2 percent proportion of oilseeds. Other crops individually do not occupy even 1 percent of total oilseeds in this region.

It is evident from figure 3 and table 3 that proportion of rapeseed and mustard and sesamum crops is losing over the period from 1991-94 to 2010-13. It individually, accounts for about 25 percent of total oilseeds area. Interestingly, castarseed and taramira emerged as an important oilseed crops in this region. These two crops accounts for about 45 percent of the oilseeds area. About 3 percent of total oilseeds area is devoted to groundnut cultivation.

IIIA-Semi-Arid Eastern Plain

Figure 3 and table 2 depicts that in 1991-94, rapeseed and mustard is a major oilseed crop of this region as well. It individually, accounts for more than three-fifth of total oilseeds area. Groundnut is another important crop followed by sesamum, which together occupy about one-

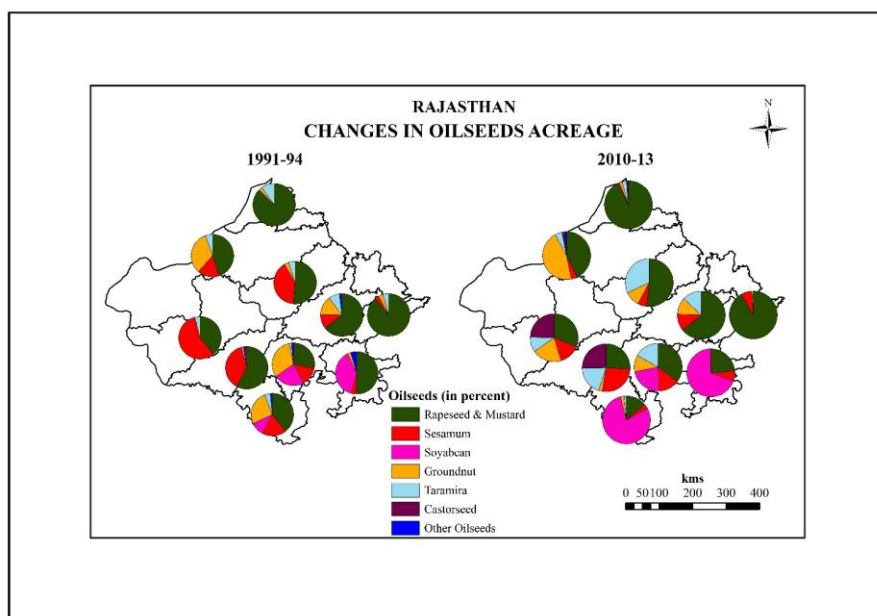


Figure 3

-fourth of total oilseed area. About 8 percent of total oilseed area is devoted to taramira cultivation. Other crops occupy rest proportion of oilseeds area.

In 2010-13 (figure 3 table 2), the semi-arid eastern plain, rapeseed and mustard is a major crop, which occupy more than 64 percent of total oilseeds area. Taramira emerged as a second ranking oilseed crop, this crop account for 13 percent of total oilseeds area. Groundnut and sesamum are emerged as important crops in term of this region, which occupy about 11 percent of total oilseeds area individually. In this region, other crops are grown here not significantly.

IIIB-Flood Prone Eastern Plain

Figure 3 and table 2 clearly shows that Rapeseeds and mustard alone occupies 90 percent of total cropped area in flood prone eastern plain. There is dominance of tubewell irrigation, which covers about 95 percent of irrigated area. Taramira, soyabean and sesamum are minor oilseed crop grows in this region, which occupied less than 5 percent of the oilseeds area.

It is evident from figure 3 and table 3, rapeseeds and mustard are the major oilseed crop in flood prone eastern plain of the state during 2010-13 as well. This crop individually account for about nine-tenth proportion of the total oilseeds area. Sesamum is another oilseed crop of the region, which occupies about 7 percent of total cropped area. There is dominance of tubewell irrigation, which covers about 95 percent of irrigated area. Other crops grown in this region include soyabean, groundnut, taramira, castorseed and other oilseeds and all these crops occupy rest proportion of total cropped area.

It is evident that the proportion of rapeseeds and mustard has been increased in this region over the period 1991-94 to 2010-13.

IVA-Sub Humid Southern Plain and Aravallis

Figure figure 3 table 2 illustrates that in the sub humid southern plain and aravallis region of Rajasthan, because of hilly and mountain-tract region of Aravalli, well drained fertile loamy soils and basins of rivers like banas, mahi etc. In 1991-94, groundnut was dominant position in this region with 30 percent of total oilseeds area. Rapeseed and mustard and soyabean are also a major oilseed crops of the region, these oilseed occupies about 28 percent and 23 percent of oilseeds area individually. About 14 percent of total oilseed area is devoted to sesamum cultivation. Other oilseeds are occupying less than 4 percent of oilseeds area.

During 2010-13 (figure 3 and table 3), in sub humid southern plain and aravallis region of Rajasthan, rapeseed and mustard is the dominant oilseed, it occupies about one-third of the total oilseed area. soyabeam is another major oilseed crop, which accounts for about one-fifth of the total oilseeds area. Both crops together occupy about half of total cropped area. About 30 percent of total oilseed area is devoted to taramira and sesamum cultivation. Groundnut accounts for 11 percent of total oilseed area.

IVB-Humid Southern Plain

The cropping pattern of humid southern plain is quite diversified. Figure and table 2 shows that rapeseed and mustard is dominant oilseed in the region. It, individually, accounts for about two-fifth of oilseeds area. Groundnut and sesamum are also important oilseed crops, which occupy 26 percent and 18 percent of total oilseed area respectively. Soyabean accounts for 10 percent of total oilseed area. About 4 percent of total oilseed area is devoted to taramira cultivation. Other crops individually do not occupy even 2 percent of total cropped in this region.

During 2010-13 (figure 3 and table 2), in southern part of Rajasthan, Soyabean crop emerged as an important oilseed crop in this region. This is the dominant oilseed crop, it occupies about three-fourth of the total oilseed area. A considerable proportion of the rapeseed and mustard area occupied by this region (about 14 percent). Other oilseeds are, sesamum, groundnut, taramira, castorseed etc.

V-Humid South Eastern Plain

It is evident from figure 3 and table 2, in 1991-94, humid south eastern plain is showing rapeseed and mustard are the important oilseed crop in term of this region which occupy half of the total oilseed area. Soyabean is another important oilseed crop in this region, which occupy 38 percent of total oilseeds area. Other oilseed crops, which individually do not occupy more than 5 percent of total oilseeds area.

During 2010-13 (figure 3 and table 2), the pattern of oilseeds in this region comprised of soyabean is the major crop, which occupies about 68 percent of the total oilseed area and acreage of rapeseed and mustard occupy about one-fourth of total oilseed area in this region. Sesamum are another important oilseed crop in this region, which account for about 7 percent of total oilseed area. Other oilseed crops individually do not occupy even 1 percent of total oilseed in this region.

In this region, soyabean crop is emerged as a dominant crop. Area under rapeseed and mustard is also significantly decreased in this region. It is due to alluvial and black soil area, increasing the well irrigation potentiality, high consumption of fertilizers.

CONCLUSION

There is pattern of oilseeds in exhibits a considerable variation across different agro-climatic region in Rajasthan. It is indeed faithful reflection of diversify in agro-ecological conditions, level of irrigation development and technological diffusion in term of modern inputs. In overall, in the state, having arid and semiarid climatic conditions, continues to have rapeseed and mustard a dominant crop. It occupy more than half of the total oilseeds area. Soyabean emerged as a second ranking oilseed crop, it recorded more than 10 percent point change over the period of time whereas the proportion of sesamum crop has been decline about 6 percent point. There is no change in the area under groundnut oilseed crop during this period. The share of total area under taramira crop in total oilseeds area has increased from 4.31 per cent in 1991-94 to 9.02 per cent in 2010-2013 in the state. It is interesting to note that the area under total castorseed has been increased in share in total oilseeds area.

In arid western plain, the proportion of sesamum and rapeseed & mustard oilseed crop declined sharply during period of study. On the other hand, castor seed, groundnut and taramira registered as emerging oilseeds in 2010-13. Rapeseed & mustard continued as a dominant crop during this period and occupied about nine-tenth of the total oilseeds area in Irrigated North Western Plain and Flood Prone Eastern Plain due to well irrigation facilities. While area under all other oilseeds has been continuously losing their acreage. In the Hyper Arid Partial Irrigated Zone of the state rapeseeds and mustard and groundnut formed the pattern of oilseeds over the period 1991-94 to 2010-13. There are three mountain tract regions (Internal Drainage Dry Zone and Transitional Plain of Luni Basin and Sub Humid Southern Plain and Aravallis) in the state, these region going towards more diversified pattern of oilseeds. In 2010-13 Transitional Plain of Luni Basin had castorseed emerging as a major oilseed crop. In Semi-Arid Eastern Plain, rapeseed and mustard is remain stagnant and dominate in the position of oilseed crops. It is evident that south and southeastern parts of Rajasthan (Humid Southern Plain, Humid South Eastern Plain) is emerged as a soya region in term of oilseeds.

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