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A GEOGRAPHYCAL STUDY OF CROP CONCENTRATION IN PARBHANI DISTRICT (MS)

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ABSTRACT:

In Parbhani district 70 percentage of people's occupation is farming. In 2001 census 68.17 percentage people were living in villages and they were depended upon the income gained by the farming for their livelihood. But climatically Parbhani district is located in rain shadow area or drought prone area. Soil of the district is comparatively of lesser quality, irrigation facilities are less, short and thorny forest patches etc. due to this reasons in the district less development of agriculture is found. There are three cropping seasons in study region, namely kharif, rabbi and summer. Kharif season begins in June or July and ends in September or October whereas rabbi season starts from March and end in may. Jowar, Bajra, gram, tur, groundnut and oil seeds are the major kharif crops grown in study region while Jowar, gram, and sunflower are rabbi crops. Fruits, Condiment, food grain crop, and vegetables are also produced in study region. Sugarcane are grown in study region in both kharif and rabbi seasons in Parbhani district.

Keywords: *Cropping seasons, Crop Concentration, kharif and rabbi*.

INTRODUCTION:

Crop concentration means the variation in the density any crop in an region at a given point of time. The concentration of a group in a area largely depends on its terrain, temperature, moisture, and soil. It has tendency to have a high concentration in the areas of ideal agro climatic conditions. The general concentration of an enterprise (crop or live stock) can be countrified with the help of location quotient or by co- efficient of localization. The various geographers applied location quotient method to work out degree of the crop concentration in specific study region. Crop concentration means areal density of individual crop or crop concentration reveals the variation in the density of any crop in a given region

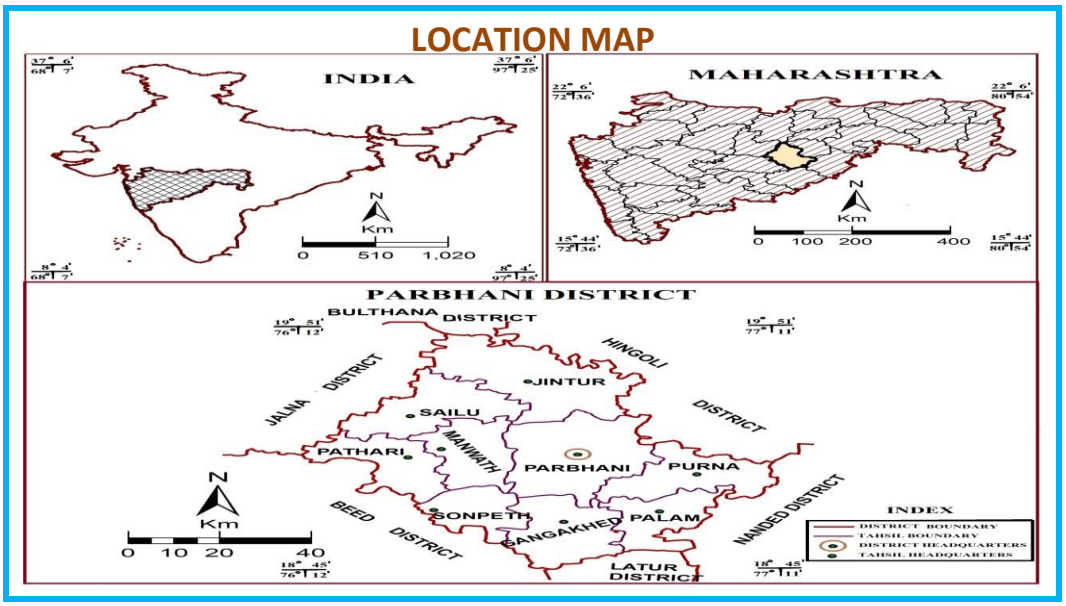
at a point of time (Chouhan, 1987). The geographers pioneer work of Florence (1948), Chisholm (1962), Bhatia (1965), Jasbir Singh (1976) these are the contributors to mark the agricultural region with the help of the quotient method. Florence (1948), compared the share of a region with that of the entire nation with help of a quotient method. Chisholm (1962) made an attempt of a quotient to measure the relative concentration with the help of coefficient of localization where comparisons are made between enterprises by calculating the differences between regional and national proportions of the area under a given enterprises.

In order to determine the tahsil wise concentration of crops Bhatia's method is used for the calculation of the location quotient. The following formula is used to work out the concentration of crop in Parbhani district. The pattern of concentration for the different crops under consideration is worked out. The index of crop concentration is calculated for the two periods i.e. 2000-2005 and 2006-2011.

STUDY AREA:

Parbhani district is an administrative district in the state of Maharashtra in India. The district headquarter is located at Parbhani. Parbhani district located between $18^0$45' north to $20^0$01' north latitudes and $76^0$13' east to $77^0$29' east longitude. The area of study region is 6511 km^2, which is 2.11 percent of the whole area of the state. The boundaries attached to the neighbouring districts on north by Buldhana and Hingoli, on south by Beed and Latur, on east Nanded and west Jalana district. Climate of Parbhani district is dry as daily mean maximum temperature range between 25^0c to 35^0c and minimum temperature range between 17^0c to 22^0c with the highest temperature of about 46^0c in the month of May. The annual average rainfall is 888 mm in Parbhani district.

Map: Location of Parbhani District



OBJECTIVES:

The main objective of present study is to analyze major crop concentration regions in Parbhani district.

DATA SOURCE AND METHODOLOGY:

Present study is based on field observation and secondary source of data. The secondary sources of data obtained from the Socio-Economic review and district Statistical abstract of Parbhani district. In order to determine the tahsil wise concentration of crops Bhatia's method is used for the calculation of the location quotient. The following formula is used to work out the concentration of crop in Parbhani district. The pattern of concentration for the different crops under consideration is worked out. The index of crop concentration is calculated for the two periods i.e. 2000-2005 and 2006-2011.

The crop concentration is grouped under three heads.

1) High crop concentration (above 01%)

2) Moderate crop concentration (0.70% to 1%)

3) Low crop concentration (below 0.70 %)

The location quotient method adopted by Bhatia (1965) is employed here to

analyses the concentration of coition in the study region.

The formula is as follows-

Index for determining Concentration of crop = (Area of crop 'a' in the component area unit / Area of all crops in the Component areal unit) ÷ (Area of crop 'a' in the entire region / Area of all crops in the entire region)

DISCUSSION:

1. Jawar

High level of Jawar crop concentration was found in Gangakhed, Purna, Palum, Sonpeth and Manvat tahsils while moderate degree of Jawar crop concentration was observed in Sailu tahsil whereas low degree of Jawar crop concentration was recorded in Parbhani, Pathri and Jintur tahsil during the period of 2000-05 (Map No.1.1A). High to moderate level of Jawar crop concentration was noticed in Gangakhed, Purna and Palum tahsils while Sailu tahsil moderate to high level and Pathri, Jintur low to moderate and Parbhani tahsil low to high level crop concentration during the period of investigation. No change in Jawar crop concentration was noticed in Sonpeth and Manvat tahsil in during 2000-05 to2006-2011 (Map No.1.1B).

Table 1. Tahsil wise Crop Concentration Index in Parbhani District (Area in %)

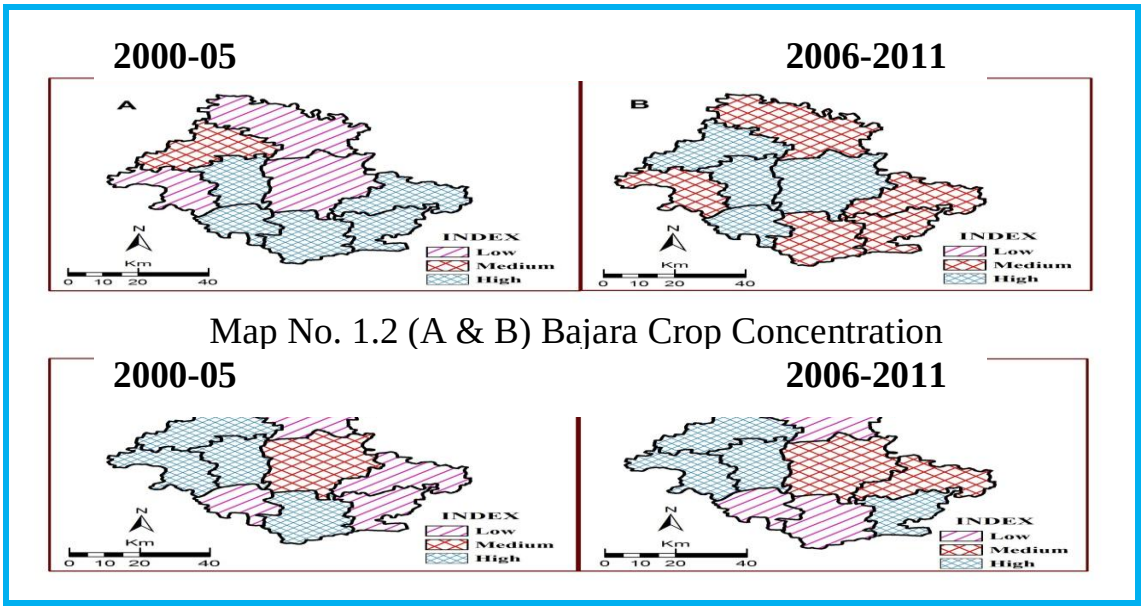
Crops	Study period	Parbhani	Gangakhed	Pathri	Jintur	Purna	Palam	Sailu	Sonpeth	Manvat
Jawar	2000-2005	0.10	1.20	0.33	0.58	1.40	1.58	0.80	1.23	1.20
	2006-2011	1.11	0.99	0.87	0.96	0.79	0.74	1.10	1.14	1.02
Bajara	2000-		1.61	1.98	0.53	0.65	0.25	1.55	0.67	1.46

	2005	0.82								
	2006-2011	0.81	0.46	1.24	0.53	0.71	1.56	1.21	0.47	2.23
Cotton	2000-2005	0.69	1.28	1.20	1.31	0.93	0.70	0.97	1.42	0.85
	2006-2011	0.80	0.91	1.47	0.93	0.93	1.16	0.98	0.93	1.11
Groundnut	2000-2005	0.74	0.55	0.65	0.74	0.88	0.42	2.89	0.36	1.92
	2006-2011	0.79	1.35	0.45	1.32	1.13	1.32	1.18	0.99	0.50
Gram	2000-2005	2.19	0.54	0.32	0.09	0.41	1.14	0.87	0.66	1.43
	2006-2011	1.24	1.37	0.51	0.87	1.53	0.96	0.74	0.95	0.63
Tur	2000-2005	1.47	0.74	1.25	1.96	0.08	0.48	0.92	0.29	0.45
	2006-2011	0.86	1.04	1.09	1.16	0.94	0.90	0.70	1.10	1.51
Other Pulses	2000-2005	0.68	0.70	1.30	1.57	0.25	0.89	0.86	1.86	2.97
	2006-2011	0.78	1.18	1.02	0.64	0.76	1.48	0.89	1.13	1.92
Sugarcane	2000-2005	1.14	0.44	1.03	0.49	0.73	0.40	1.88	1.29	1.38
	2006-2011	1.19	0.69	2.32	0.02	2.79	0.13	0.15	1.27	0.75

Source: *Computed by the Author*.

Tahsil wise Crop Concentration Index display that Table No 1 shows-

Map No.1.1 (A & B) Jawar Crop Concentration



Map No. 1.2 (A & B) Bajara Crop Concentration

2. Bajara

Crop concentration of Bajara is shown in the table 1 between 2000-05 and 2006-2011. Tahsil like Gangakhed, Pathri, Sailu and Manvat registered high level of Bajara crop concentration while Parbhani tahsil showed moderate level of Bajara crop concentration. Low level of the crop concentration was noticed in Jintur, Purna, Palum and Sonpeth tahsils during 2000-05 (Map No.1.2A).

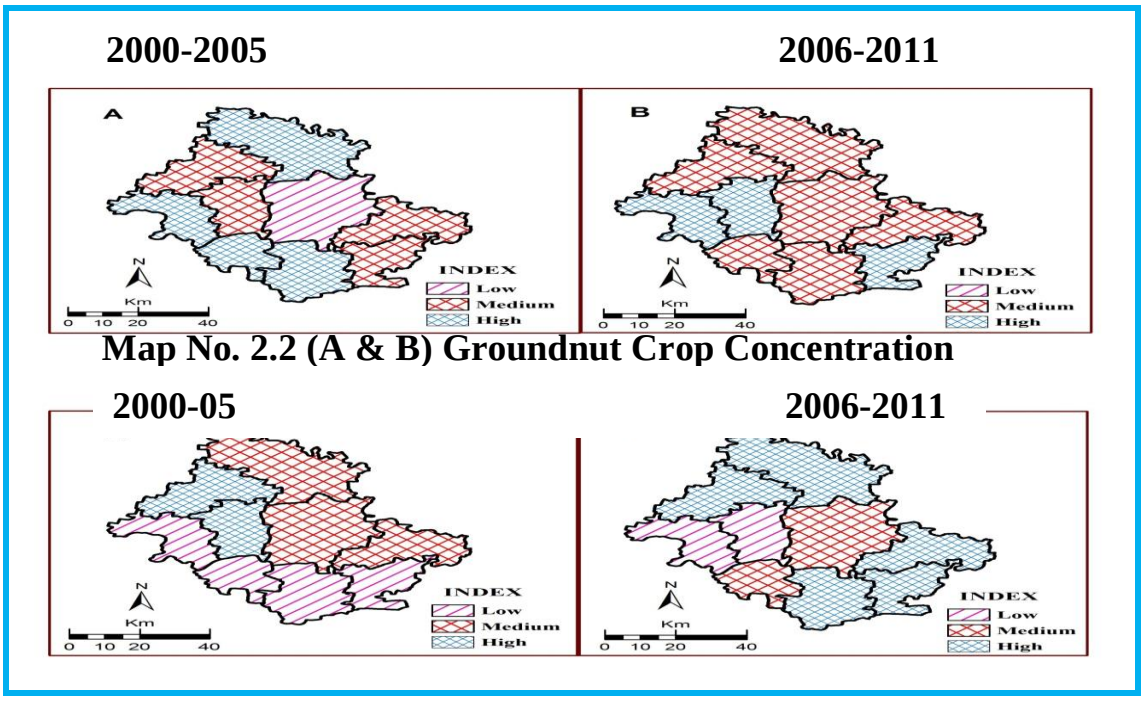
Table 1 and Map No 1.2B exhibit that no change in Bajara crop concentration was recorded in Parbhani, Pathri, Jintur, Sailu, Sonpeth and Manvat tahsils during period under study. High to low level of Bajara crop concentration was noticed in Gangakhed tahsil. Low to moderate level of Bajara crop concentration was registered in Purna and low to high level Palum tahsils during the period between 2000-05 and 2006-11.

3. Cotton

High level of Cotton crop concentration was found in Gangakhed, Pathri, Jintur and Sonpeth tahsil while moderate degree of Cotton crop concentration was observed in Purna, Palum, Sailu and Manvat tahsil whereas low degree of Cotton crop concentration was found in Parbhani tahsil in during 2000-05 (Map No.

2.1A). Four changes, Gangakhed, Jintur and Sonpeth tahsil registered down ward shift from high to moderate level of cotton crop concentration while Palum and Manvat tahsil upward shift from moderate to high level and Parbhani tahsil low to moderate level of Cotton crop concentration. No change in cotton crop concentration was observed in Pathri, Purna and Sailu tahsil during the period of 2000-05 to 2006-11 (Map No. 2.1B).

Map No. 2.1 (A & B) Cotton Crop Concentration



Map No. 2.2 (A & B) Groundnut Crop Concentration

4. Groundnut

High level of Groundnut crop concentration was found in Sailu and Manvat tahsil while moderate degree of Groundnut crop concentration was observed in Parbhani, Jintur and Purna tahsil whereas low degree of Groundnut crop concentration was found in Gangakhed, Pathri, Palum and Sonpeth tahsil in during 2000-05 (Map No. 2.2 A). Four changes was occurred in during the period of investigation Manvat tahsil registered down ward shift from high to low level of Groundnut crop concentration while Jintur and Purna tahsil upward shift from moderate to high level and Sonpeth tahsil low to moderate level, Gangakhed and Palum tahsil of Groundnut crop concentration. No change in Groundnut crop

concentration was observed in Parbhani, Pathri and Sailu tahsil during the period of 2000-05 to 2006-11 (Map No. 2.2 B).

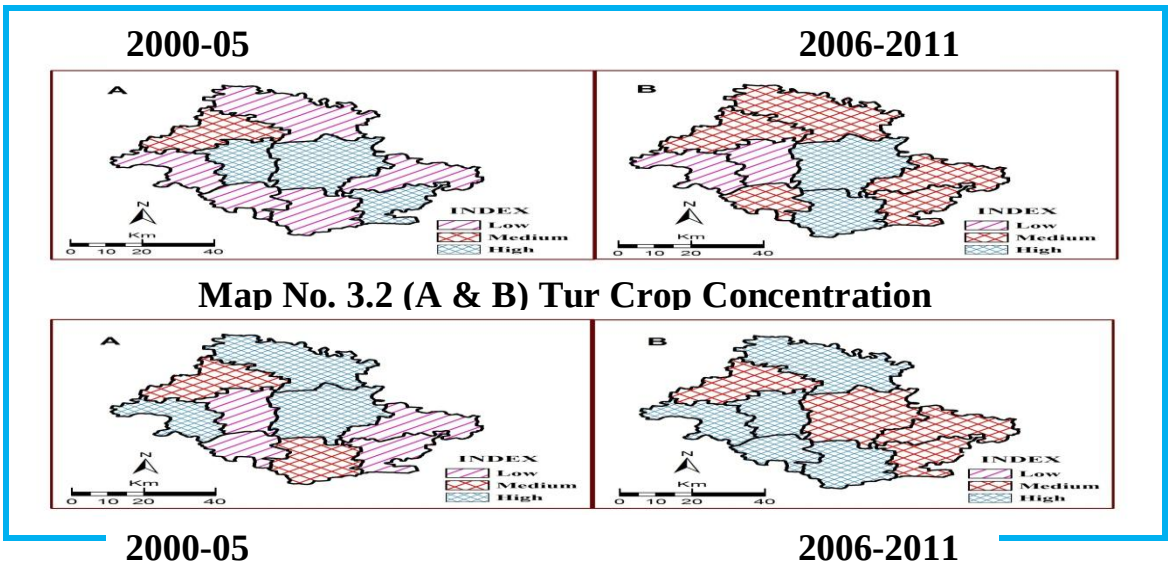
5. Gram

High level of Gram crop concentration was found in Parbhani, Palum and Manvat tahsil while moderate level of Gram crop concentration was observed in Sailu tahsil whereas low level of Gram crop concentration was found in Gangakhed, Pathri, Jintur Purna and Sonpeth tahsil in during 2000-05 (Map No. 3.1A). Four changes, Manvat tahsil registered down ward shift from high to low level and Palum tahsil high level to moderate level crop combination while Jintur, Purna and Manvat tahsil upward shift from low level to moderate level and Gangakhed tahsil low level to high level of Gram crop concentration. No change Gram crop concentration in Parbhani, Pathri and Sailu tahsil in during the period of 2000-05 to 2006-11 (Map No. 3.1B).

6. Tur

High level of Tur crop concentration was found in Parbhani, Pathri and Jintur tahsil while moderate level of Tur crop concentration was observed in Gangakhed and Sailu tahsil whereas low level of Tur crop concentration was found in Purna, Palum, Sonpeth and Manvat tahsil in during 2000-05 (Map No. 3.2 A).

Map No. 3.1 (A & B) Gram Crop Concentration



Map No. 3.2 (A & B) Tur Crop Concentration

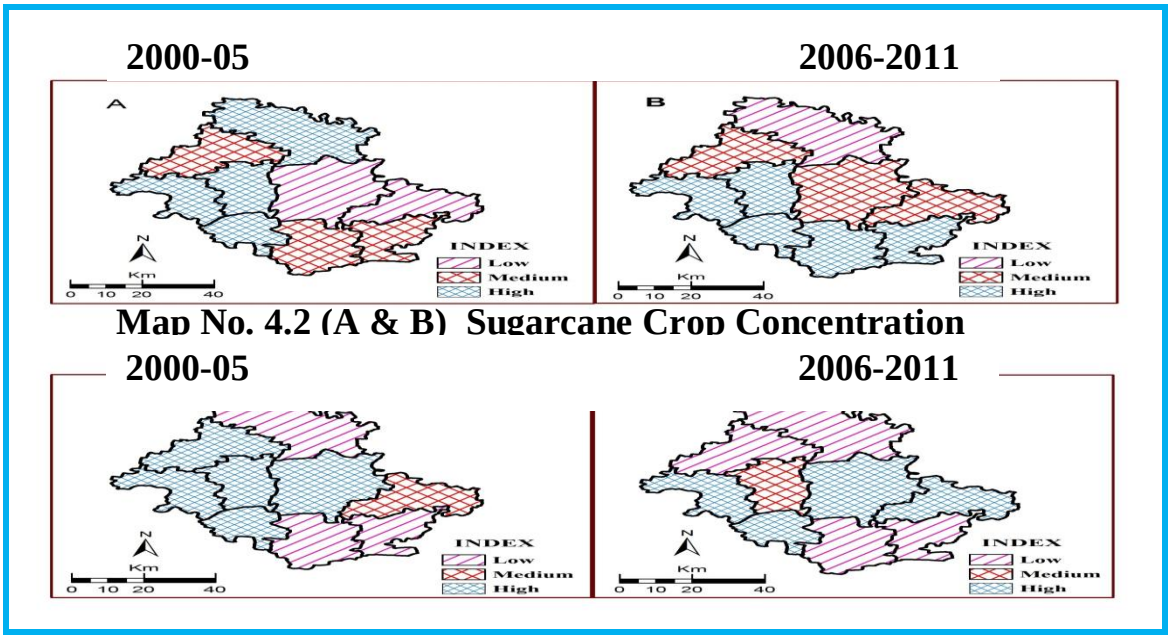
Four changes was occurred in during the period of investigation Parbhani tahsil registered down ward shift from high to moderate level Tur crop concentration while Gangakhed tahsil upward shift from moderate level to high level and Purna and Palum tahsil low to moderate level , Sonpeth and Manvat tahsil low to high level of Tur crop concentration in during 2000-05 to 2006-11.

7. Other Pulses

Crop concentration of pulses is shown in the table 1 between 2000-05 and 2006-11. Tahsil like Pathri, Jintur, Sonpeth and Manvat tahsil while high level of Other Pulses crop concentration while Gangakhed, Sailu and Manvat tahsil showed moderate level of pulses concentration whereas low level of Other Pulses crop concentration was found in Parbhani and Purna tahsil in during 2000-05 (Map No. 4.1A).

Four changes was occurred in during the period of investigation Jintur tahsil registered down ward shift from high degree to low degree while Gangakhed and Palum tahsil upward shift from moderate degree to high degree and Parbhani, Purna tahsil upward shift from low degree to moderate degree of Other Pulses crop concentration in period 2000-05 to 2006-11 (Map No. 4.1B).

Map No. 4.1 (A & B) Pulses Crop Concentration



Map No. 4.2 (A & B) Sugarcane Crop Concentration

8. Sugarcane

High level of Sugarcane crop concentration was found in Parbhani, Pathri, Sailu, Manvat and Sonpeth tahsil while moderate level of Sugarcane crop concentration was observed in Purna tahsil whereas low level of Sugarcane crop concentration was found in Gangakhed, Jintur and Palum tahsil in during 2000-05 (Map No. 4.2 A). Four changes was occurred in during the period of investigation Sailu tahsil registered down ward shift from high to low level and Manvat tahsil was high to moderate level Sugarcane crop concentration whereas Purna tahsil upward shift from moderate level to high level Sugarcane crop concentration in during the period of investigation 2000-05 to 2006-11.

Conclusion:

High level of Jawar concentration was noticed in Gangakhed, Purna, Palum, Sonpeth and Manvat tahsils while Sailu tahsil there was moderate level of Jawar concentration. High level of Tur crop concentration was found in Parbhani, Pathri and Jintur tahsil during 2000-2005.

High concentration of Cotton was experienced in Gangakhed, Pathri, Jintur and Sonpeth tahsils, High level of Gram crop concentration was found in Parbhani, Palum and Manvat tahsil, Groundnut concentration in Sailu and Manvat, Sugarcane crop concentration was observed in Parbhani, Gangakhed, Pathri, Jintur, Palum and Sonpeth tahsil, Bajara concentration in Gangakhed, Pathri, Sailu and Manvat tahsils, Pathri, Jintur, Sonpeth and Manvat tahsil while high level of Other Pulses crop concentration during the first and last six years.

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