



Temporal Analysis of Sugarcane Area in Jalna District: A Geographical Review

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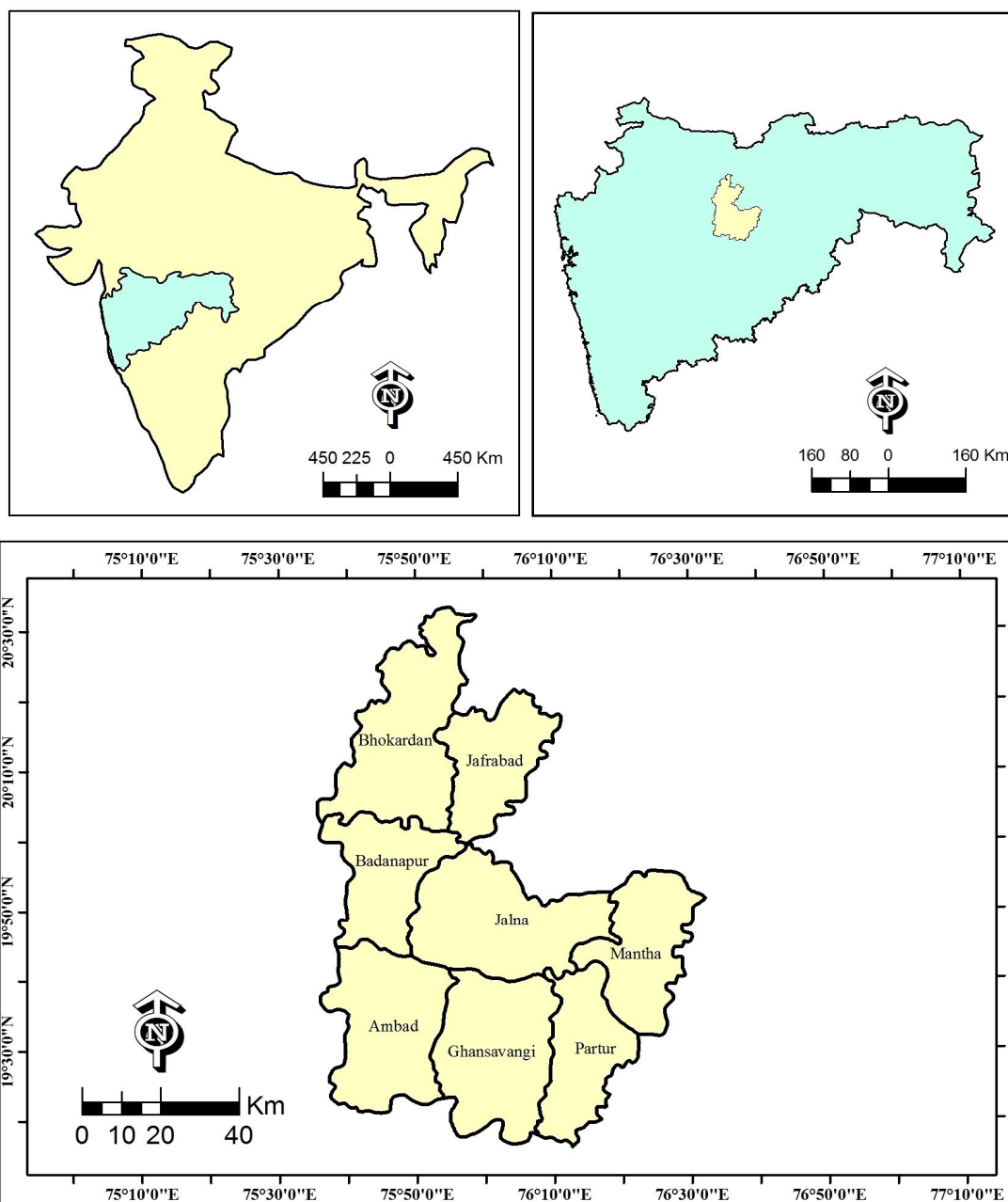
Introduction:

India is the second largest country in sugarcane production in the world. The economic importance of the crop is much more that signified by its share in gross cropped area. Sugarcane is a suitable crop for Maharashtrian farmers as there is suitable climate for its cultivation. Though Maharashtra covers only 18% area of total sugarcane cultivation, it contributes to 35% in the country's total sugar production because of higher recovery of sugar than any other state in the country. Sugarcane productivity is the main concern of sugarcane breeding programs. Early maturing and high yielding multiple stresses tolerant varieties are therefore needed for sustaining sugarcane cultivation.

Study Area:

For the study Jalna district has been selected. The district is located in the central part of Marathwada region in Maharashtra State. It is located between 19⁰15' and 20⁰32' North latitudes and 75⁰36' to 76⁰45' east longitudes. The north-south extension of Jalna district is 150 Kms and east-west stretch of the district is 110 kilometers. Jalna district has a significant location on Deccan plateau. Except Ajanta and Satamala range and river basins, majority part of the district comes under plateau region. The region has major portion under flat topography, hence it supports high concentration of population. Jalna district comprising 8 tahsils, 4 sub-divisions and eight panchayat samities. The geographical area of Jalna district is 7727 Sq. KM. According to Census-2011, there are 4 cities, 970 villages and 781 grampanchayats Jalna district.

Jalna District - Location Map



According to 2011 census, the total population of Jalna district has 19,59,046. Out of this total population, the men population were 10,11,473, whereas women population were 9,47,573. Sex ratio in district is 937. About 80.73% population lives in rural area on the other hand only 19.26% population lives in urban area. The 2011 census shows about 71.09% literacy rate in the district..

**Objectives:**

- 1) To Study the temporal variation in area under sugarcane in study area.
- 2) To find out the trend of variation in area under sugarcane.

Database & Methodology:

For the present study secondary data has been considered. The data from 1991 to 2015 has been used. The information regarding area under sugarcane has been collected from the district census handbook, socio economic analysis yearly book, statistics from the office of Deputy director of Sugar, Aurangabad region and offices of sugar factories in Jalna district. The statistical information has been organized in the table starting from 1991 to 2015 and the variation has been calculated which has been analysed further.

Analysis:**Area Under Sugarcane Crop in Jalna District: (Year 1991 to 2015)**

Sugarcane is not the prime crop in the Jalna district. Researcher has tried to trace the area under sugarcane crop from the year 1991 to 2015. The result is shown in the table 1

Table 1

Area Under Sugarcane Crop in Jalna District

(Year 1991 to 2015)

Sr. No.	Year	Area (Hectare)	% change
1	1991	13430	--
2	1992	18285	36.15
3	1993	20381	11.46
4	1994	16374	-19.66
5	1995	21934	33.96
6	1996	22493	2.55
7	1997	11440	-49.14
8	1998	15032	31.40
9	1999	21658	44.08



Sr. No.	Year	Area (Hectare)	% change
10	2000	18392	-15.08
11	2001	21807	18.57
12	2002	18582	-14.79
13	2003	19220	3.43
14	2004	22762	18.43
15	2005	13337	-41.41
16	2006	20933	56.95
17	2007	18317	-12.50
18	2008	23682	29.29
19	2009	18091	-23.61
20	2010	23428	29.50
21	2011	16833	-28.15
22	2012	20396	21.17
23	2013	19538	-4.21
24	2014	23336	19.44
25	2015	17227	-26.18

Source: Computed by Researcher

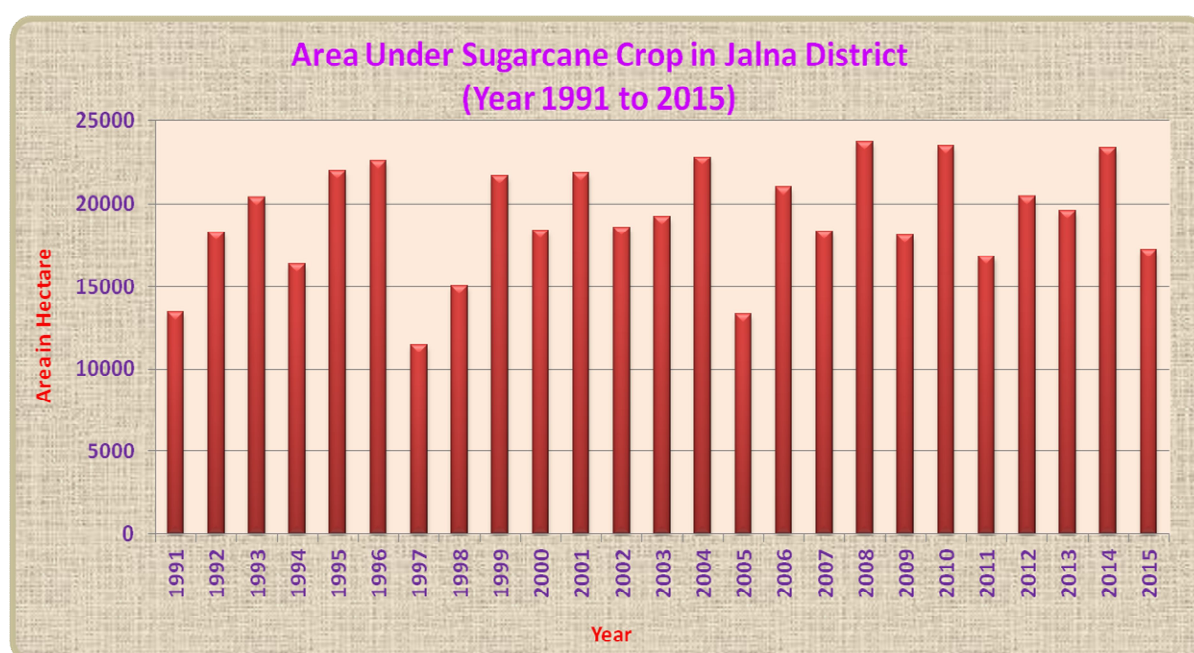


Table 1 shows fluctuating pattern of area under sugarcane in Jalna district from 1991 to 2015. It is observed that, in the year 1991 the area under sugarcane was 13430 hectares, which increased upto 17227 hectares in year 2015. It revealed that, the area under sugarcane has increased by 1.28 times during the study period. During the study period (Year 1991 to 2015) the least area under sugarcane was found in the year of 1997 and that was 11440 hectares on the contrary highest area under sugarcane was found in the year 2008 and that was 23682 hectares.

Categorization of area under sugarcane crop reveals that, above 20 thousand area under sugarcane has been noticed from the year 2008, 2010, 2014, 2004, 1996, 1995, 2001, 1999, 2006, 2012 and 1993 whereas 15 thousand to 20 thousand area under sugarcane has been found from the year of 2013, 2003, 2002, 2000, 2007, 1992, 2009, 2015, 2011, 1994 and 1998. Below 15 thousand area under sugarcane has been noticed from the year of 1991, 2005 and 1997.

Mean, Standard Deviation, Co-efficient of Variation and Compound Growth Rate of Sugarcane Area (1991 to 2015):

In the time series data, statistical measures like mean, standard deviation, co-efficient of variation and compound growth rate are some of the important tools. Researcher has also tried to use these measures regarding sugarcane area in the district for the year 1991 to 2015.

Table 2

Mean, Standard Deviation, Co-efficient of Variation and Compound Growth Rate of Sugarcane Area in Jalna District (1991 to 2015)

Sr. No.	Statistical Tool	Result
1	Mean	19076
2	SD	3361
3	CV	17.62
4	Compound Growth	1.13

Source: Calculated by researcher.



Table 2 reveals that, the mean of the sugarcane area of the Jalna district for the year 1991 to 2015 is 19076 hectares, standard deviation is 3361 hectares, coefficient of variation is 17.62 and compound growth rate is 1.13.

Conclusions:

Both positive and negative growth rate in regard with preceding year in sugarcane area has been observed. Highest positive growth rate (56.95%) for sugarcane area has been recorded from the year 2006 whereas lowest positive growth rate (2.55%) has been noted from the year 1996. On the contrary, highest negative growth rate (49.14%) has been noted from the year 1996 whereas lowest negative growth rate (4.21%) has been recorded from the year 2013.

References:

- Chaturvedi, H.S.,(1951): "The Sugar Industry of India", Himalaya Publishing House, Bombay
- Jagadish Lal, "Raising Sugar Productivity through Improvement in Sugarcane Development, Marketing and Supply", Indian Journal of Sugarcane Technology, Vol. 12, June 1997.
- Khullar, D.R. (2002): "India- A Comprehensive Geography", Kalyani Publishers, Ludhiyana
- Madnani, Acharya (1988): "Applied Econometrics for Agricultural Economists", Himanshu Publications, Udaypur
- Parthsarthy, S.V. (1972): Sugarcane in India, K.C.P. Ltd., (Madras), Chennai
- Sandhu, D.S. (1981): Geography of Sugarcane Cultivation - A Case study of Haryana:, Vishal Publications, Kurukshetra (Haryana).
- Singh G.B. (1979): "Transformation of Agriculture", Vishal Publication, Kurushetra