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SOLAPUR SUGAR INDUSTRY AND SUSTAINABILITY

Dr. Pawar R. M.

Assistant Professor
Department of Geography,

Shri Sant Damaji Mahavidyalaya, Mangalwedha, Dist-Solapur (Maharashtra)

ABSTRACT

Solapur district is situated in drought prone area of Maharashtra but in solapur district highest highest sugar factories are run successful. These factories plays a major role in socio also economic development.

KEYWORDS- Solapur Sugar Industry, Sugar Industry Sustainability.

INTRODUCTION

Sugar cane is one of the important commercial crops. It is the main raw material for gar, khandsari and sugar. Sugar is an important commodity because it occupies an important place in the Indian diet and is in high demand abroad. Solapur seems to have the most sugar mills in Maharashtra. In recent years, Solapur's sugar cane acreage was 1.79 lakh in 2011-2012, which is 19 lakh. 46% of the 9.2 million hectares of net sown area in the district. Unsurprisingly, sugarcane takes a disproportionate share of the area's water at the expense of other farmers.

STUDY AREA

Solapur District is located in the north-western of the state of Maharashtra. The Solapur region is bounded by 17°10'N to 18°32'N latitude and from 74°10'E to 76°15'E longitude. The average elevation of Solapur district at mean sea level is between 500 and 800 m. Climatically, Solapur district is located in the rain shadow region of South Maharashtra. The rain is mainly caused by the southwest monsoon, and the average annual precipitation is 545.4 mm. The climate of Solapur area belongs to the dry tropical type. The Bhima River runs through the middle part of the area and the Nira Canal also supplies a lot of water to the area. The dry tropical climate, availability of water and highly fertilized black cotton soils are the reasons for growing crops in the Solapur region.

The highest and lowest average temperatures recorded are 44.6°C and 21.5 °C, respectively. The annual temperature range is 23°C. Rainfall is an important climatic factor affecting the agricultural economy of the study area.

OBJECTIVE: A study of sugarcane area and water availability in Solapur district.

Data collection and Research Methodology:

For this study data and information is collected from secondary sources like books, journals and unpublished documents are collected. Annual sugar factory reports are found highly useful to narrate historical features of sugar factories.

Finding & Discussion- Present sugarcane cultivation in Solapur district The 2012-13 sugarcane crushing season (which goes on for 160 days from roughly 15th October) has concluded. It may be instructive to look at the figures of the sugarcane crushed by sugar factories in Solapur, one of the worst drought-hit districts in the state (tahsil wise rainfall in Solapur district is given in table 1). During the year 2012-13 In Solapur District alone 126.25 lakhs of cane were processed in 28 sugar mills. As a reality check, we should add that the normal monsoon precipitation for the region (June-October) is 560 mm and the 2012 monsoon rainfall was 412 mm. See Solapur district. (Source: <http://www.mahaagri.gov.in/rainfall/index.asp>)

Table 1: Tahsil wise Rainfall in Solapur district in 2012 monsoon (June Oct)

Tahsil Name	Normal Rain (mm)	Actual Rain (mm)	% To Normal
North Solapur	617.3	465.4	75
South Solapur	617.3	465.4	75
Barshi	596.5	551.8	93
Akkalkot	676.3	556.3	82
Mohol	573.9	316.4	55
Madha	534.4	435.5	81
Karmala	544	272.6	50
Pandharpur	573.7	360.4	63
Sangola	462.4	393.6	85
Malshiras	441.3	308.3	70
Mangalwedha	519.8	402.9	78
Solapur	559.7	412	74

(Source: <http://www.mahaagri.gov.in/rainfall/index.asp>).

Solapur seems to have the most sugar mills in Maharashtra. This region accounted for 18.25% of cane crushed in the state in 2012-2013. In 2012-13, described as "a drought worse than the drought of 1972", Solapur added four new sugar mills.

Solapur River Basins

The Solapur district belongs to five different sub basins as described in the report of the Maharashtra Water and Irrigation Commission (June 1999). See attached map and Table 2 for details. Availability of water from all natural sources. Table 2 shows that 86.6% of the Solapur district, excluding parts of Karmala and Malshiras tahsil, fall within these extremely scarce river basins. The commission said that "only low water intensive crops" and "only low water intensive economic activities" should be allowed in these sub watersheds. "It is desirable to impose a total ban on water intensive crops like sugarcane in these deficit sub basins".

Table no - 2
Sub basin wise area of Solapur district

Sub basin No	Sub Basin Name	Tahsils of Solapur in the sub basin (area of the tahsil in sub-basin)	Area of Solapur in the sub-basin	Solapur area in the sub basin as % of sub basin area
17	Bhima upto Ujani	Karmala (930)	930	6.32%
18 A	Remaining Bhima NEERA	Malshiras (1065)	1065	15.2%
18 B	D/s of Ujani including Man	Malshiras (457) + Sangola (1550) + Pandharpur (1304) + Madha (813) + Mohol (565) + S. Solapur (146) + Mangalwedha (1141)	5976	57.3%
19 A	Sina	Madha (732) + Mohol (843) + S Solapur (718) + Akkalkot (80) + N Solapur (736) + Barshi (1483) + Karmala (680)	5272	41.3%
19 B	Bori-Benetura	Akkalkot (1310) + S. Solapur (331)	1641	43.9%
	TOTAL	14884	14884	--

Note: Information from Maharashtra Water and Irrigation Commission, numbers in first column as per the same report; tahsil wise area figures following <http://solapur.nic.in>

Rise of sugarcane cultivation in Solapur

The graph shows that Solapur's sugarcane acreage roughly doubled in the 70's and 80's. Between 2005-06 and 2011-2012, Solapur grew over 160%, the highest growth stage of sugarcane cultivation. In recent years, Solapur's sugar cane acreage was 1.79 lakh in 2011-2012, accounting for 19.46% of the 9 net acreage. In 2012-13, about 2.63 billion cubic meters of water was consumed in the sugar cane region.

Construction of new sugar mills is planned in Solapur There are also plans to build at least 19 new sugar mills in Solapur (see Table for details). Sakhar Diary 2013 indicates the location and capacity of these plants. Together, these new mills will add a processing capacity of 85.52 lakh tonnes of sugarcane. 2012-13 126.25 lakh tonnes of cane were processed in 28 sugar mills in Solapur district. In 2012-13, described as "a drought worse than the drought of 1972", Solapur opened four new sugar mills.

Tahsil wise crushing capacities of existing and proposed sugar factories in Solapur district

Tahsil	Existing sugar factories		Planned sugar factories	
	Number of Factories	Crushing Capacity	Number of Factories	Crushing Capacity
Madha	3	11000	5	15000
Mohol	3	7500	1	2500
Karmala	3	6250	2	5000
Malshiras	5	19500	-	--
Akkalkot	2	6000	2	5000
Barshi	2	5000	1	2500
Mangalwedha	1	2500	3	9950
Pandharpur	4	12500	-	--
Sangola	1	2500	1	2500
North Solapur	3	10000	1	2500
South Solapur	1	2500	3	8500
TOTAL	28	85250	19	53450

Note: For some of the proposed factories where we could not get figures of crushing capacity, we have assumed it to be 2500 T/d, the normal minimum capacity. Source: Sugar Commissionerate, Pune

To grow this 85.52 lakh tonnes of sugar cane, an additional 105,580 hectares would need to be allocated for sugar cane cultivation. The newly planned sugar mill will increase the total area under sugar cane in Solapur to 2.685 lakh hectares and the sugar cane and sugar mill's annual water consumption will exceed 7400 MCM. This far exceeds the total water allocation planned for Solapur, according to the MWIC report.

MWIC assessment is exhaustive including all possible planned water schemes, so there is no possibility for Solapur to get water over and above the ultimate planned schemes in Solapur. This means that by going for these new sugar factories, Solapur would possibly taking water of other regions or accelerating towards rapid exhaustion of its available groundwater. Water Consumption in 2012-13 considering a productivity of 81 tonnes of sugarcane per hectare, the cane crushed during 2012-13 occupied 155864 hectares in Solapur. Considering that ratoon type of sugarcane requires 168.75 lakh liters water per hectare at farm, which is the lowest water requirement among all types, (40% of sugarcane in Maharashtra is under ratoon type cultivation), amount of water used for cultivating sugarcane on 155864 hectares of area in Solapur works out to be 2630 Million Cubic Meters. This is 1.73 times the capacity of the Ujani Dam.

Unsurprisingly, sugarcane takes a disproportionate share of the area's water at the expense of other farmers. 4.42 billion cubic meters of water was used to grow sugar and flour. According to the MWIC report, despite the largest possible increase (many of all plans planned have not been implemented or approved), the total water share in the Solapur region is 4.188 billion m³. However, Solapur's current level of sugarcane cultivation already appears to require more water than Solapur's final planned water distribution. Pollution in sugar mills Water pollution is also a major problem in sugar mills. In the end, while the Supreme Court's decision to release water for Ujani from the upstream dam is in some ways welcome, the water released from the upstream dam is likely to be used for the same unsustainable sugarcane cultivation at Solapur.

CONCLUSION- We urgently need to see the bigger picture of how the sugar boom happened in Solapur in the first place. Drought has been common in the region for centuries as described in the Solapur District Handbook. Solapur experiences a drought every five years. In the context of climate change, rainfall will become more unreliable and droughts will become more frequent. But unless corrective action is taken to deal with Solapur's unsustainable sugar boom, we can expect a more serious catastrophe.

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