

How is 2012-13 Maharashtra Drought worse than the one in 1972?

Maharashtra is facing one of the worst droughts this year. Union Agriculture Minister Sharad Pawar as well as Chief Minister Prithviraj Chavan have said that this year's drought is worse drought than the one in 1972, which was termed as a 'famine'. Maharashtra has the highest number of large dams in the country and is now claimed to be suffering the worst drought in four decades or more.



Sugarcane going to sugar factories against teh backdrop of a dry Ujani Canal in Solapur

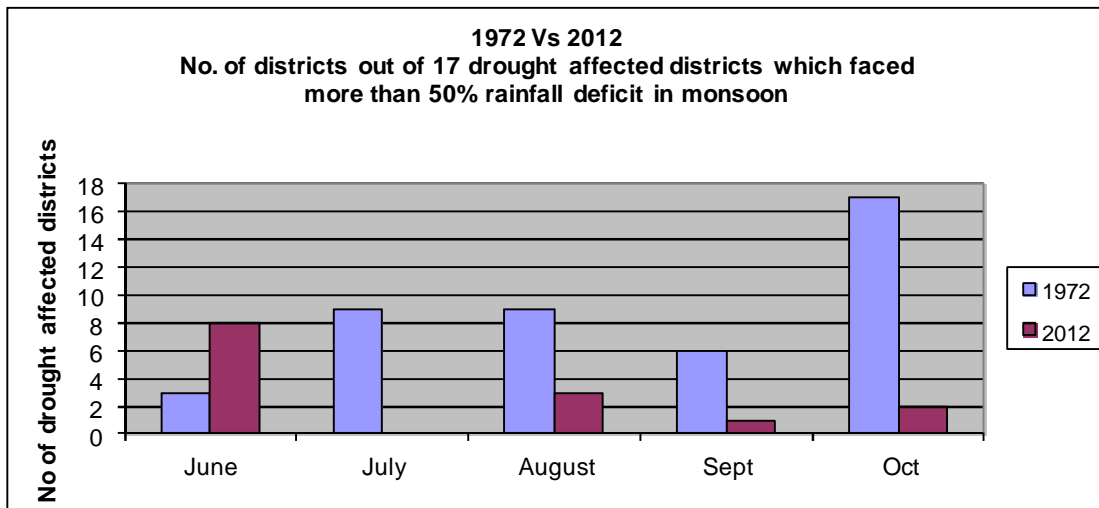
Photo: SANDRP

However, an analysis of the rainfall figures and the monthly rainfall pattern in 1972 and 2012 with respect to the normal rainfall pattern in seventeen drought affected districts shows a different picture. From a Meteorological and agricultural point of view, this year's drought cannot be called worse than that in 1972. It is possible that hydrologically, this year's drought may prove to be worse than 1972 for some districts. The blame for this lies entirely on wrong decisions about building unviable and undesirable large dams, wrong cropping patterns, diversion of water for non priority uses, neglect of local water systems and unaccountable water management by the Maharashtra government, MWRRA (Maharashtra Water Resources Regulatory Authority, set up in 2005 under a World Bank funded programme) as well as the Union Government.

Let us look at the figures of the rainfall of 1972 and 2012. Table 1 shows monthly normal and actual rainfall for 1972 and 2012 for the months of June to October and their total for the seventeen districts¹ mentioned as drought affected. When the monthly rainfall of 1972 and 2012 shows more than 50% deficit² from normal, it is marked in red background for 1972 and in red numbers for 2012.

¹ Ahmednagar, Pune, Solapur, Sangli, Satara, Aurangabad, Beed, Jalna, Latur, Osmanabad, Nanded, Akola, Parbhani, Buldhana, Nashik, Dhule and Jalgaon

² It may be noted here that India Meteorological office calls rainfall deficient when deficit is 20-60% and scanty when deficit is more than 60%. We have used the figure for 50% just for comparison here.



It is clear from the Table 1 that in June 2012, eight districts had monthly rainfall less than half the normal. In July 2012, no district showed a deficit rainfall more than 50%. In August 2012, the deficit was more than 50% in case of three districts: Aurangabad, Jalna and Osmanabad (these three districts also experienced over 50% deficit in June). This was the case for only Jalna in Sept 2012 and for Dhule and Jalgaon in Oct 2012. It seems from this comparison that Aurangabad, Jalna and Osmanabad were some of the worst drought affected districts this year, which is indeed the case.

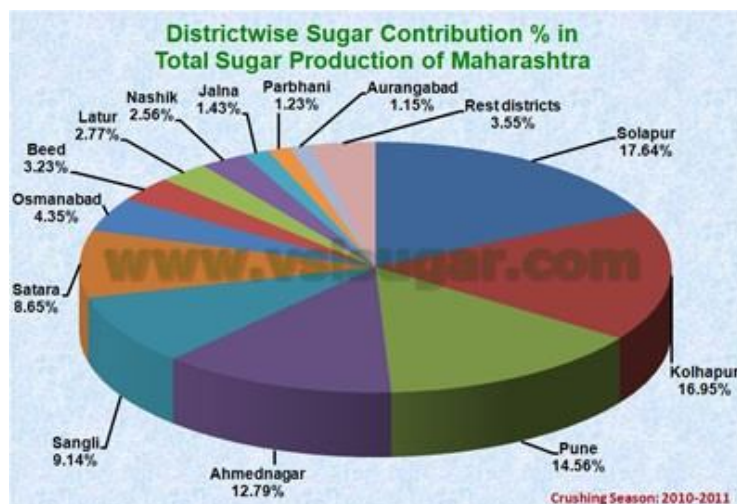
In comparison, the number of districts that faced more than 50% deficit in monthly rainfall in 1972 were: 3 in June, 9 in July, 9 in August, 6 in September and all 17 in October 1972. This comparison between 1972 and 2012 for the number of districts facing over 50% deficit in monsoon months clearly tells us that the 1972 rainfall was much lower than the 2012 rainfall for every month with the sole exception of June.



Sugarcane in various stages of growth in Solapur, in March 2013

Photo: SANDRP

Table 2 gives the total rainfall of these five months (June-Oct) in a normal year, in 1972 and in 2012 for these districts. This table also gives the 2012 rainfall as % of the normal rainfall and as % of 1972 rainfall in separate columns. It is clear from this comparison that only in case of two districts (Sangli and Dhule) is the 2012 rainfall substantially lower than 1972. In two other districts (Jalna and Satara) the rainfall in 2012 is lower than that in 1972, but difference is less than 7% in both cases. **In remaining thirteen districts, the monsoon rainfall in 2012 was more than that in 1972.**



The accompanying chart gives comparison of the monsoon rainfall for a normal year and also for 1972 and 2012.



Dry River Bed of Seena River in Madha, where additional 5 sugar factories have been sanctioned

Photo: SANDRP

While comparing the 1972 and 2012-13 droughts, it must be kept in mind that rainfall in 1971, the year before the 1972 drought was also low. In comparison, rainfall in Maharashtra was above average in 2011 & most of the dams were full. Maharashtra Economic Survey for 2011-12 notes, "Total rainfall in the State during 2011 was 102.3 per cent of the normal rainfall." The state agriculture commissioner had stated in 2011: "The good distribution of rain has resulted in good

quality of crops. The above average rainfall has filled up nearly all dams, which will help replenish the soil in the run-up to the rabi season.”³

Table 1 Normal, 1972 and 2012 Rainfall (in mm) in Drought Affected Districts

District	Year	June	July	August	September	October	TOTAL
Ahmednagar	Normal	101.4	102.5	84.3	148.1	61	497.3
	1972	80.36	80.29	60.2	97.87	1.2	319.92
	2012	39.6	86.8	63.8	93.6	99.5	383.3
Pune	Normal	139.9	286.6	181.4	144.9	77.3	830.1
	1972	132.41	338.48	68.74	120.42	1.08	661.13
	2012	55.8	161.2	205.6	116.8	137.2	676.6
Solapur	Normal	102	101.1	104.3	181.4	70.9	559.7
	1972	49.35	64.28	20.03	91.4	25.99	251.06
	2012	56.1	93.6	53.2	103.8	105.3	412
Satara	Normal	149.3	339.9	204.5	140.5	87.9	922.1
	1972	241.54	535.62	73.65	127.79	1.75	980.35
	2012	114.2	270.1	278.2	123.9	131.4	917.8
Sangli	Normal	92.9	132.1	96.7	133.6	96.3	551.6
	1972	151.5	337.19	54.05	107.24	15.17	665.16
	2012	48	78.7	58.8	68	154.4	407.9
Aurangabad	Normal	131.4	168.1	166.7	157.3	51.8	675.3
	1972	92.07	46.64	64.63	85.64	0.85	289.84
	2012	49.1	118	67.6	84.7	49.4	368.8
Jalna	Normal	138.9	171.8	166.7	156.7	54	688.1
	1972	105.46	54.83	73.32	102.16	0.61	336.39
	2012	43.4	95.2	62.7	78.4	44.3	324
Beed	Normal	128	161	138.8	177.6	63.1	668.5
	1972	78.35	36.69	48.09	105.09	2.84	271.06
	2012	54.9	108.6	82.7	107.3	81.4	434.9
Latur	Normal	145.6	192.7	181.8	205.2	63.3	788.6
	1972	64.32	46.54	84.57	123.98	6.48	325.88
	2012	115.6	183.4	160.8	163.9	136.3	760
Osmanabad	Normal	163.3	141.6	221.9	148.6	66.3	741.7
	1972	59.03	32.23	33.48	115.17	17.54	257.44
	2012	45.8	142.1	46.2	106.8	49.7	390.6
Nanded	Normal	164.8	273.9	246.9	197.2	60.9	943.7
	1972	128.16	74.17	115.95	50.02	3.99	382.28
	2012	108.4	219.3	154.9	125.5	52.6	660.7
Akola	Normal	135.2	231.3	182.8	148	37.6	734.9
	1972	119.26	130.75	244.64	72.22	0.58	567.45
	2012	151.4	292.9	148.8	198.7	36.3	828.1
Nashik	Normal	154.4	378.1	282	198.5	60.9	1073.9
	1972	101.476	252.837	207.496	78.948	2.37	643.127
	2012	83.2	262	280.1	162.4	75.7	863.4
Dhule	Normal	116.6	168.7	131.8	113.3	36	566.4
	1972	87.68	159.823	240.364	48.517	1.578	537.962
	2012	32.5	171	112	79.6	10.6	405.7
Jalgaon	Normal	130	206.8	187.8	139.2	39.1	702.9
	1972	88.734	30.941	149.924	59.197	0.836	379.632
	2012	19.6	181	102.5	86.2	15.3	404.6
Parbhani	Normal	126.6	210.8	203.5	180.7	55	776.6
	1972	98.107	61.838	97.434	84.497	0.783	342.659
	2012	99.5	192.4	107.4	159.3	78.5	637.1
Buldhana	Normal	141.8	203.7	173.9	148.8	44.8	713
	1972	108.647	97.172	155.134	91.78	0.487	453.22
	2012	113.9	201.8	110.9	141.7	43.9	612.2

Source: 1972 Rainfall Data: http://indiawaterportal.org/met_data/

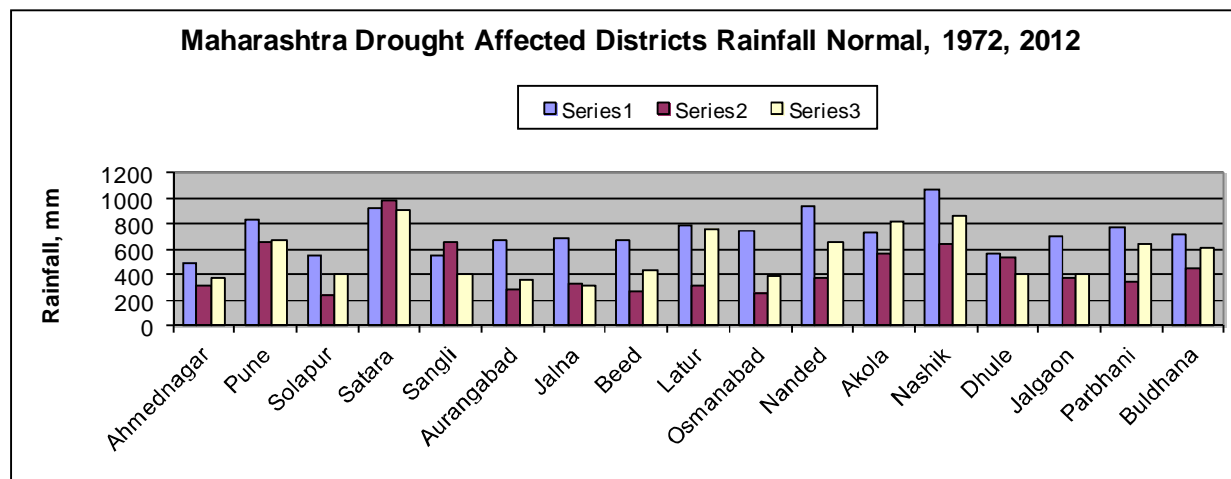
Normal and 2012 Rainfall Data: <http://www.mahaagri.gov.in/rainfall/index.asp>

In addition, Maharashtra has by far the largest number of Big Dam in India. In 1972, some of the big irrigation projects in the worst drought affected districts. In 40 years since 1972, Maharashtra has built a very large number of big dams, ostensibly to help these drought prone areas. For example, Aurangabad has Jayakwadi project (completed in 1976), Beed has Mazalagaon Project (Jayakwadi Stage II), Jalna has Upper Dudhna and Lower Dudhna projects. Osmanabad depends partly on Ujani

³ http://envis.maharashtra.gov.in/envis_data/?q=monsoon_update_jul11_nws

Dam, partly on schemes in Krishna basin, Solapur completely depends on Ujani. Live storage of most of the dams in drought affected districts is either 0 or near zero today. All these projects and increased groundwater use facilities in 2012 should actually be able to reduce the impact of rainfall deficit in 2012, which is lower than the deficit of 1972. But the situation is actually the worse in 2012 compared to 1972, claims the Chief Minister and the Union Agriculture Minister. So what are the reasons for this? For one, area under sugarcane in Maharashtra was 167 000 ha in 1970-71, going up to 1022 000 ha in 2011-12 (Maharashtra Economic Survey 2012-13).

Chart showing district-wise Normal, 1972 and 2012 rainfall for the 16 drought affected districts of Maharashtra



As can be seen from the profiles of some of the districts given in Table 3 and accompanying chart, Solapur, Pune, Ahmednagar, Sangli, Satara, Osmanabad, Beed, Latur, Nashik, Jalna, Parbhani and Aurangabad, all drought prone and drought affected districts are major sugar producing centres of the State. They collectively produce 79.5% of sugar produced in Maharashtra. According to Maharashtra Economic Survey for 2012-13, "As on 31st December, 2012, out of the total sugar production in the country, the share of State was 35.3 per cent". So more the drought prone districts of Maharashtra produce more than a quarter of India's sugar!

Table 2 Total Rainfall in drought affected districts in 1972 as against 2012 (in mm)

	Districts	Normal	1972	2012	2012 as % of Normal	2012 as % of 1972
1	Ahmednagar	497.1	319.9	383.3	77.1	119.8
2	Pune	830.1	661.1	676.6	81.5	102.3
3	Solapur	559.7	251.1	412.0	73.6	164.1
4	Satara	922.1	980.4	917.8	99.5	93.6
5	Sangli	551.6	665.2	407.9	73.9	61.6
6	Aurangabad	675.3	289.8	368.8	54.6	127.2
7	Jalna	688.1	336.4	324.0	47.1	96.3
8	Beed	668.5	271.1	434.9	65.1	160.4
9	Latur	788.6	325.9	760.0	96.4	233.2
10	Osmanabad	741.7	257.4	390.6	52.7	151.7
11	Nanded	943.7	382.3	660.7	70.0	172.8
12	Akola	734.9	567.5	828.1	112.7	145.9
13	Nashik	1073.9	643.1	863.4	80.4	134.3
14	Dhule	566.4	538.0	405.7	71.6	75.4
15	Jalgaon	702.9	379.6	404.6	57.6	106.6
16	Parbhani	776.6	342.6	637.1	82.0	186.0
17	Buldhana	713.0	453.2	612.2	85.9	135.1

As one travelled during March 2013 in some of the drought affected districts like Pune, Solapur, Ahmednagar and Nashik one saw unending fields of sugarcane, and some of Banana and Grapes on both sides of the road. Many of these fields were planted after August 2012 when it was known that Maharashtra would be facing a drought this year. There was no attempt by anyone in the Maharashtra govt or administration to curb either planting of sugarcane and other water intensive crops or to curb any of the water intensive activities like running of sugar and wine factories in the

drought affected districts. The builders continued to advertise sale of houses attached with swimming pools in drought affected areas. Maharashtra continues to divert millions of cubic meters of water everyday, *out of* the Krishna and Bheema basin, to the Konkan area with average rainfall of over 3000 mm. The manager of Solapur Hotel said that there is no water scarcity. Groundwater levels are down, but there seemed little sign of drought in most of these areas. The poor and the cattle are facing the water shortage. However, it seems those who had the money and power continued to get as much water as they needed, for whatever purpose they want it for. An NDTV programme on March 29, 2013 accused NCP leaders of stealing water in times of drought⁴.

Table 3: Profiles of some of the drought affected districts

Area in '000 ha	Ahmednagar	Aurangabad	Beed	Jalna	Osmanabad	Sangli	Solapur	Pune
Geographical area	1702	1007.7	1068.6	772.6	748.5	861	1487.8	1562
Sown area	1146.3	654	876	529	519.3	557.1	919.7	945
Net Irrigated area	330	163.3	137.7	116.5	106.66	174	251.5	287
Canal irrigated area	84	31.05	108.92	22.17	18.72	45	31.4	121.5
GW irrigated	246	130.31	Nil	91.28	102.74	38.5	193.5	92.3
Sugarcane area	2007-08	133.3	34.3	74	25.1	53.8	64.7	154.5
	2010-11	126	23.3	58.8	19.3	43.2	76.3	163.1

Amazingly, the Maharashtra Economic Survey for 2012-13, published after March 19, 2013⁵ does not mention that the state is suffering from drought, leave aside giving details of the drought prone areas. Interestingly, it says that during 2012 monsoon, Maharashtra suffered rainfall deficit of 9.7% and that 10 districts and 136 talukas had deficit over 25%. And Yet the survey reported that water availability situation was *alarming* in Aurangabad, Jalna, Beed, Osmanabad, Nanded, Ahmednagar, Nashik, Jalgaon, Pune, Satara, Sangli, Solapur and Buldhana (13 districts). These districts, the survey said, suffered "very severe water scarcity". It said 1779 villages were supplied water through tankers as on March 4, 2013, topping the list was Aurangabad division with 771 villages. 4709 wadis were also supplied water through tankers, topping the list here was Pune division with 3197 wadis.

MWRRA and the state machinery have entirely failed in managing water levels at Jayakwadi & Ujni dams and releases from the upstream dam releases. There has been no serious attempt at controlling area under sugarcane and sugarcane crushing in the drought areas or controlling unauthorised sugarcane cultivation around Ujani backwaters, or unauthorised lifts from upstream of many dams like Nandur Madhyameshwar and through canal systems Majalgaon Project or lifting of water from the river beds for sugarcane or curbing other non essential water intensive activities. In fact all efforts have been towards increasing the area under sugarcane and other water intensive activities in the drought prone areas. In affidavit in the High Court, Maharashtra government said on March 28, 2013 that MWRRA effectively does not exist!

40 years after Maharashtra's worst drought of 1972, the state seem to be in worse situation this year, despite spending lakhs of crores on irrigation projects and despite putting in place numerous institutions and authorities to manage water. While 1972 drought could be called a natural calamity, 2012-13 drought is a disaster of water management accompanied by corruption, extremely water intensive cropping pattern unsuitable for the drought prone areas, pushed by the government and the politicians, top heavy institutions without local participation or transparency, absence of responsive disaster management system and absence of a long term view to manage drought.

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⁴ <http://www.ndtv.com/video/player/news/maharashtra-drought-sugar-barons-from-sharad-pawar-s-party-stealing-water/269732>

⁵ http://mahades.maharashtra.gov.in/files/publication/esm_2012-13_eng.pdf