



Geographical Analysis of Rainfall and Irrigation Status in Sangli District

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Abstract:

Rainfall is the basic source of water on the earth surface. Land and water are valuable and essential resources which form the basis of all the life and forms key resource in all economic activities ranging from agriculture to industry. The reality, however, is that 97 percent of the total water on earth of about 1400 Billion Cubic Meter (BCM) is saline and only 3 percent is available as fresh water. Irrigation facility provides the water to the agriculture when there is shortage of rainfall. Different irrigation projects were constructed for the irrigation purpose in the Sangli district.

Keywords: *Rainfall, Irrigation, Sangli District*

Introduction:

The agriculture has been main source of livelihood of the people in the district. The agriculture depends upon the soil, irrigation facilities, fertilizer, finance, good quality of seeds, good climatic condition and human effort for the cultivation but the important factor among this is the irrigation facility. The rainfall is the basic source of water on the earth surface so less rainfall leads to water scarcity and it ultimately indicates the drought prone area. The irrigation projects includes medium projects, minor project on state level and on local level, percolation tank for percolation of the water to increase the groundwater, Kolhapur type weir and storage bandhara etc.

Study Area:

Sangli district is located on the south and southeast of Maharashtra. The district's area is around 8,572 square feet. The district has different geographical, economic and social status. Jat, Atpadi, KavtheMahankal are the permanent drought-hit talukas. Many villages in Palus, walwa, Mirajtalukas are always at risk of flood. Shirala, Khedgaon, Khanapur are hill stations. Sangli districts major rivers are Krishna, Warna. The length of Krishna river in the district is 105 kms. The temperature of the district is between 14 degree centigrade and maximum of 42 degrees centigrade. The district's average rainfall is 400-450 mm.

Objective:

The objective of the study is analyzing the rainfall and irrigation status of Sangli district using socio-economic report of Sangli district.

Database and Methodology:

The primary and secondary database is used for the present study of distribution of rainfall and various

irrigation projects and various statistical methods were used.

Results and Discussion:**Rainfall**

It is observed from table 1 shows that average rainfall for a period of five years (2017-2021) varies from 360.48 mm at Palustahsil to 896.4 at Shiralatahsil. However average rainfall for the entire district for above period is 587.38 mm.

Table 1 Tahsil wise Annual Rainfall of Sangli District

Sr.No.	Tahsil	2017	2018	2019	2020	2021
1	Shirala	977	1070	1014	1136	285
2	Walwa	669.2	791	861.6	611	331.1
3	Palus	246.5	385.7	483	262	425.2
4	Kadegaon	650	783	797.8	453.3	630
5	Khanapur	709	893.5	840.5	524	437
6	Atpadi	420	668	656	404	312.5
7	Tasgaon	451.7	591.3	666	304.1	717
8	Miraj	433.6	823	757.6	522.8	280.8
9	K.Mahankal	463	608.1	584.5	403.5	224
10	Jat	406.2	811.5	813.2	524	431

Source: Socio-Economic Review of Sangli districts, 2021

The climate of the district is dry except during south west monsoon period that is from June to Sept. The normal annual rainfall over the district ranges from 558.8 mm (Jath) to 938.9 mm (Shirala). The percentage of probability of receiving excess rainfall (That is 25% or more in excess of the normal) varies from 18% at shirala to 23% at Vita. The probability of occurrence of moderate drought ranges from 11% (Shirala) to 20% (Islampur). Severe drought conditions were experienced at all stations for 1% to 7% of the years. As major parts of the

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district have experienced moderate to severe and acute drought conditions for more than 20% of the years except extreme western parts around Shirala and a small area in the contract part around Tasgaon. The remaining area of the district can be classified as drought area.

Irrigation:

Irrigation is artificial source of water for the growth of vegetation and plants. The water must be available for the plant according to the soil type, climatic condition and water requirement of the

crop. The various irrigation schemes are implemented by Maharashtra and Indian government under minor projects, medium projects, and major project. The main purposes of the irrigation scheme are irrigation, drinking water facility and control on the flood during the rainy season.

The table 2 indicates the irrigation projects implement in the region for the irrigation purpose. The irrigation projects includes medium projects, minor project on state level and on local level, percolation tank for percolation of the water to increase the groundwater, Kolhapur type weir and storage bandhara etc. The Sangli district is having five number of major irrigation project for supply the water for irrigation purpose in

the district. The Sangli district is having six numbers of medium projects which are located in the Walwa, Shirala, Tasgaon, KavtheMahankaltahsil and two projects in the Jattahsil. The minor projects are 88 in the region, the Tasgaon and Jattahsil is having highest number of minor projects (17) and Walwa tahsil is having least in number which is 0. The total Percolation tanks are 904 in the region, out of that 243 in Atpaditahsil and followed by in the Jattahsil which is 180. The K.T.Weir is majority constructed in the Kadegaontahsil which are 41 from the 153 in the district. The storage bandhara was constructed for irrigation and drinking water purpose, the total constructed in the district is 149 from that 98 constructed in the Atpaditahsil.

Table 2 Sangli District: Irrigation Project 2019

Sr.No	Tahsil	Major Project	Medium Project	Minor Project		Percolation Tank	K.T. Weir	Storage Bandhara
				State	Local			
1	Shirala	5	1	2	0	50	3	0
2	Walwa		1	0	0	26	4	0
3	Palus		0	6	0	7	5	0
4	Kadegaon		0	3	4	60	41	0
5	Khanapur		0	6	0	74	14	6
6	Atpadi		0	10	6	243	12	98
7	Tasgaon		1	17	0	68	14	9
8	Miraj		0	7	0	51	9	0
9	K.Mahankal		1	10	0	145	30	21
10	Jat		2	4	13	180	21	15
	Total	5	6	65	23	904	153	149

Source: Socio-Economic Review of Sangli districts, 2019

Table 3 Sangli District: Irrigated Area (ha)(2018-19)

Sr. No.	Tahsil	Minor Project	Medium Project	Major Project
1	Shirala	799	1540	0
2	Walwa	30589	1159	103
3	Palus	16992	2213	580
4	Kadegaon	1815	0	9455
5	Khanapur	1211	0	6565
6	Atpadi	2824	0	0
7	Tasgaon	935	1591	12769
8	Miraj	29249	0	33347
9	K.Mahankal	1865	397	13758
10	Jat	1689	53	22550
	Total	87968	6953	91127

Source: *Socio-Economic Review of Sangli districts, 2019*

The table 3 shows the area under irrigation from the different projects in Sangli district. The total outlay from different schemes is 186048 hectares in the region. The share of major project stands at 91127 hectares, medium project 6953 hectares and minor project is 87968 hectares. The shares of major projects are more than other schemes. The Walwa tahsil has the highest area under irrigation from the minor project at 300589 hectares and Miraj tahsil has the highest area under irrigation under the major project which is 33347 hectares.

Conclusion:

The average rainfall for a period of five years (2017-2021) varies from 360.48 mm at Palustahsil to 896.4 at Shiralatahsil. However average rainfall for the entire district for above period is 587.38 mm. The Sangli district is having six

numbers of medium projects which are located in the Walwa, Shirala, Tasgaon, KavtheMahankaltahsil and two projects in the Jattahsil. The minor projects are 88 in the region, the Tasgaon and Jattahsil is having highest number of minor projects (17). The total outlay from different schemes is 186048 hectares in the region. The share of major project stands at 91127 hectares, medium project 6953 hectares and minor project is 87968 hectares.

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