

Green Audit Report



Manoharbhair Shikshan Prasarak Mandal's
Mahatma Gandhi Arts, Science & Late N. P. Commerce College
Armori, Dist. -Gadchiroli.441208
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Green Audit Report

DEPARTMENT OF GEOGRAPHY

Title

**Rainfall Distribution and Analysis in Armori Taluka
and Gadchiroli District**

SESSION - 2016 - 17 TO 2019 - 2020

Submitted
to
Internal Quality Assurance Cell

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Green Audit Report
Department of Geography
Rainfall Distribution and Analysis in Armori Taluka
and Gadchiroli District

Geography of Armori

1) Place: -

The Gadchiroli District has founded on dated 26 August 1982 in landscape of 14412 Sq. fit. Geographically Armori taluka has found North West in Gadchiroli, and Armori is situated on west at a distance of 4 km from Wainganga River and 5 km from Gadhavi river goes western side.

2) Climate – Rainfall & Temperature: -

There is a variety of diversity in Gadchiroli district. Where temperature is more in May and June an average Temperature growth is Summer time almost 47 to 48 Degree C and in winter time 9 to 11 Degree.

Probably in this District rainfall from monsoon wind and rainfall from 1400 to 1500 mm June to October.

3) River: -

Gadchiroli District is mainly the Wainganga River. The river goes to the west of the District and the Gadhavi River flows through the east from west. Godavari from the southern border. The Indravati River flows from east. In the besides imp rivers are Dina, Khobragadi, Kathani, Por, Nibra, Kotari, Parlkota, Pamul Gantam etc.

4) Soil: -

The soil in Armori is situated in the lower part of the Wainganga & Gadhavi River bank. The lower part of the river is fertile and the mud is the soil.

Sandy soil, black soil and rocky soil are found in and around Ashta, Rampur Chak. It is included some parts are Gadchiroli, Armori, Chamorshi taluka. Rice is a main crop in there.

5) Crops: -

In all the taluka of Gadchiroli District, Rice crop is important. Rice crop and around 75% of the area rice dominated. Along with it seen Pigeon Pea (Tur), Popat, Chili, Groundnut and Vegetable etc.

6) Transportation and Communication: -

In Gadchiroli District road from Nagpur – Gadchiroli – Sironcha and road from Gadchiroli – Chandrapur and also road is important from Gadchiroli – Dhanora – Rajnandgaon. The state governments Zilla Parishad and Public works department constructed the road length of 11,798 km by the end of 2012.



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Introduction: -

Gadchiroli district, east of the state of Maharashtra, was formed from Chandrapur district on 26 August 1982. Gadchiroli district is mainly known as a tribal and Naxalite district. Gadchiroli district has the highest forest cover and mineral reserves in the state of Maharashtra. The total geographical area of the Gadchiroli district is 14412 square kilometers. In this research to study the increase or decrease in the average rainfall of Armori taluka in Gadchiroli district from 2016 to 2019. And to study the average rainfall and increase and decrease in production of rice crop by Armori taluka in Gadchiroli district.

Gadchiroli district came into existence and separated from Chandrapur district on 26 Aug 1982. A Geographically Gadchiroli district is Located in the south-east of Maharashtra state, Gondia and Bhandara Locate in the north of the district, Chhattisgarh locates in the east while Andhra Pradesh in south Chandrapur district located in the west, Gadchiroli district is situated between 18° 35' and 20° 52' north latitudes and 79° 45' and 80° 58' east longitudes. The district occupies an area of 14412 sq. km. Wainganga is the major river of the district which flow from the west direction and it is the boundary line of the district.

This district is generally considered a rural, tribal and Naxalite district. The road Tran's potation in Gadchiroli district is efficient. From 12 Talukas of Gadchiroli district, most of the tourist places are present in rural part. These places are historical fort pilgrim center, places of natural beauties, sanctuaries but till they are not developed.

Armori is a Taluka in Gadchiroli District of Maharashtra State, India. Armori Taluka Head Quarters is Armori town. It belongs to Vidarbha region. It belongs to Nagpur Division. Specially Armori taluka situated in North West in Gadchiroli District, Armori is located at 20.46°N 79.98°E. It has an average elevation of 199 metres (676 feet). The average Temperature of Gadchiroli is around 28°C although it very from around 21°C during Winter (December) to 36°C during the Summer (May). The hottest month of the year is May with temperature varies from 28.5°C to 44.9°C. The coolest month is of the year is December, with temperature varies from 11.5°C to 29.1°C.

Marathi is the Local Language here. Also, People Speaks Hindi, Gondi, Bengali, Telgu. Total population of Armori Taluka is 90,846 living in 20,495 Houses, Spread across total 104 villages and 34 panchayats. Males are 45,760 and Females are 45,086



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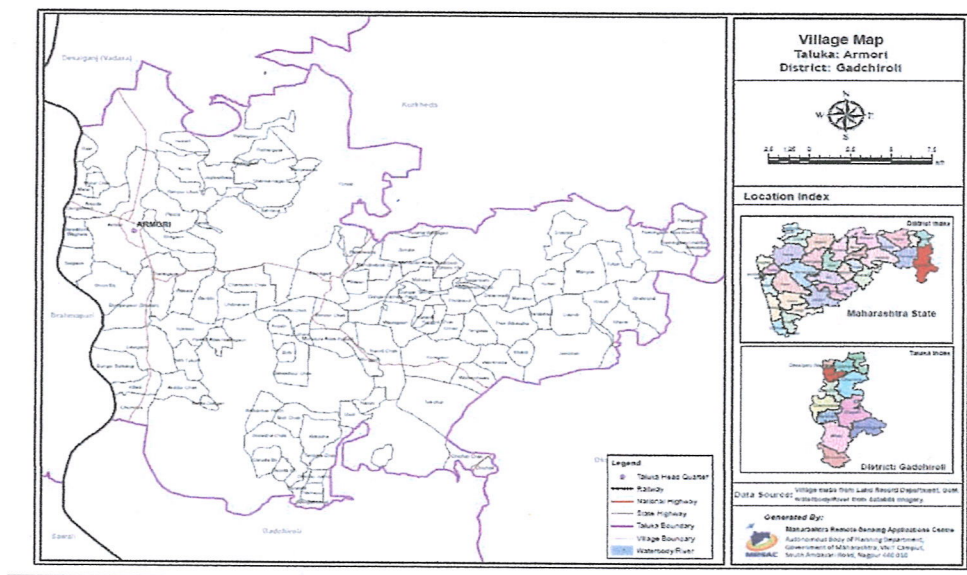


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Satellite Google Image of Armori



Location Map of Armori

Objective of study: -

1. To study the correlation between rainfall and rice crop production in Gadchiroli district.
2. To study the increase or decrease in the average rainfall in Gadchiroli district from 2016 to 2019.
3. To study the effect of average rainfall on paddy farming in Gadchiroli district 2016 to 2019.
4. To study the average rainfall and increase and decrease in production of rice crop by taluka in Gadchiroli district.

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❖ **Average of annual rainfall and actual rainfall in Gadchiroli district-**

Sr. no.	Taluka	No. of Average Rainy days	Average Rainfall	No. of Actual Rainy days (2016)	Actual Rainfall in this year (2016)	Percentage increased or decreased in rainfall in the reference year compared to the average (2016)	No. of Actual Rainy days (2017)	Actual Rainfall in this year (2017)	Percentage increased or decreased in rainfall in the reference year compared to the average (2017)
1	Desaiganj wadsa	76	1427.4	64	1369.6	- 4.0	58	911.6	-36.1
2	Armori	74	1365.4	65	1614.2	18.2	59	1036.2	-24.1
3	Kurkheda	77	1536.9	72	1572.6	2.3	54	1139.2	-25.9
4	Korchi	79	1546.9	68	1344.6	-13.1	51	1299.0	-16.0
5	Dhanora	83	1747.7	76	1586.4	9.2	68	958.8	-45.1
6	Gadchiroli	77	1619.0	66	1560.1	3.6	62	1001.5	-38.1
7	Chamorshi	71	1536.9	72	1832.6	19.2	34	1229.7	-20.0
8	Mulchera	73	1536.9	66	2293.6	49.2	47	1125.0	-26.8
9	Etapalli	66	1460.8	82	1794.7	22.9	66	1043.3	-28.6
10	Bhamaragarh	93	1460.8	79	2192.8	50.1	53	1384.0	-5.3
11	Aheri	78	1477.9	77	1844.7	24.8	59	1144.5	-22.6
12	Sironcha	82	1312.0	73	1370.1	4.4	69	914.8	-30.3
	Total	78	1502.3	72	1698.0	13.0	59	1099.0	-26.8

1. Gadchiroli district receive 13% more rainfall than the average in 2016. Korchi taluka in Gadchiroli district received 13.1 % (1344.9 mm) less rainfall than the average (1546.9 mm), While Mulchera taluka received 49.2 percent (2293 mm) more rainfall than the average rainfall (1536.9 mm).

Similarly, in Armori taluka an average of 1365.4 mm. The rainfall was 1614.2 mm. in 65 days as compared to this rainfall. Armori appears to have received 18.2% more rainfall than the average in 2016.

2. In 2017, Gadchiroli district received 59 days out of 78 days of average rainfall with an average rainfall of 1099 mm out of 1502.3 mm. Rainfall decreased by 20.8%. In 2017 no anyone taluka in Gadchiroli district has received such an average rainfall. Dhanora taluka of Gadchiroli district received 45.1 percent less rainfall than the average rainfall, which is 68 days out of the average 83 days with 1747.7 mm. of rainfall. Of these only 958.8 mm. that's how much rain fail.

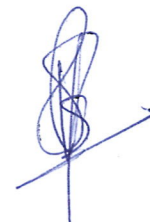
Similarly, Armori taluka receive 59 days of rainfall out of an average of 74 days in which rainfall decrease by 24.1 percent as compared to average rainfall taluka received 1036 mm of rainfall in 2017 as against the average of 1365.4 mm.



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Sr. no.	Taluka	No. of Average Rainy days	Average Rainfall	No. of Actual Rainy days (2018)	Actual Rainfall in this year (2018)	Percentage increased or decreased in rainfall in the reference year compared to the average (2018)	No. of Actual Rainy days (2019)	Actual Rainfall in this year (2019)	Percentage increased or decreased in rainfall in the reference year compared to the average (2019)
1	Desaiganj wadsa	76	1427.4	49	1258.3	-11.8	75	1835.6	30.2
2	Armori	74	1365.4	49	1078.2	-21.0	72	1746.6	33.4
3	Kurkheda	77	1536.9	55	1137.5	-26.0	75	1793.5	12.3
4	Korchi	79	1546.9	62	1202.2	-22.3	75	1580.1	8.7
5	Dhanora	83	1747.7	71	1402.9	-19.7	81	2061.2	26.9
6	Gadchiroli	77	1619.0	58	1303.6	-19.5	78	1828.8	14.9
7	Chamorshi	71	1536.9	56	1213.6	-21.0	70	1528.9	40.3
8	Mulchera	73	1536.9	57	1595.6	3.8	57	1414.8	9.3
9	Etapalli	66	1460.8	77	1456.9	-0.3	69	1747.5	12.1
10	Bhamaragarh	93	1460.8	71	1808.4	16.9	74	2263.2	39.4
11	Aheri	78	1477.9	70	1810.4	22.5	75	1873.2	37.1
12	Sironcha	82	1312.0	74	1685.3	28.5	72	1244.2	-0.6
	Total	78	1502.3	62	1404.4	-6.5	73	1743.1	21.8

3. Gadchiroli district also received 6.5% less rainfall in 2018 as compared to 2017. Gadchiroli district has received less rainfall in some taluka and more in some talukas in 2018. In kurkheda taluka of Gadchiroli district the average rainfall was 55 days as compared to 77 days, of which 1536.9 mm received 1137.5 mm. This means that rainfall appeared to have decreased by 26% compared to average rainfall. Sironcha received 1685.3 mm of rainfall in 74 days as compared to the average of 80 day in Sironcha which is 28.5% more than the average rainfall.


Similarly, Armori taluka received only 49 days of rainfall as compared to 74 days of average rainfall of 1365.4 mm. as compared to 1078.2 mm of rainfall, which is 21 % less than the average rainfall.

4. Gadchiroli district has seen an increase of 21.8 percent in 2016, 2017 and 2018 compared to the average rainfall in 2019. In Bhamragad taluka of Gadchiroli district, 74 out of 93 average rainy days received 2263.2 mm. out of 1460.8 mm. of rainfall which is 39.4 % more. Sironcha taluka received 72 out of 82 days of rainfall and 1244.2 mm out of 1312 mm of rainfall which is 0.6 % less.

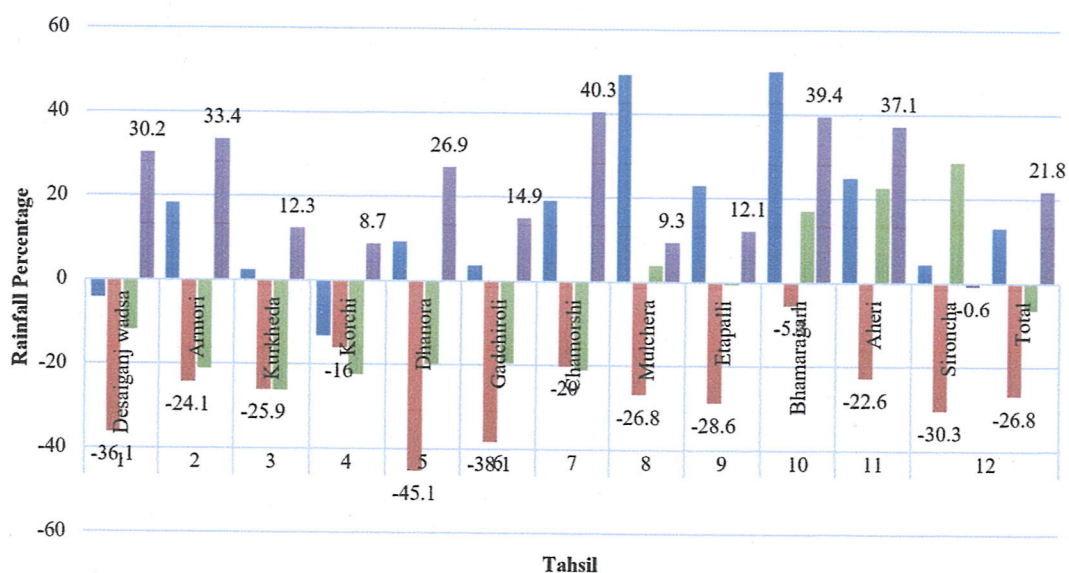
Similarly, Armori taluka receive 72 days out of 74 rainy days with an average rainfall of 1746.6 mm out of 1365.4 mm which is 33.4% more than the average rainfall.


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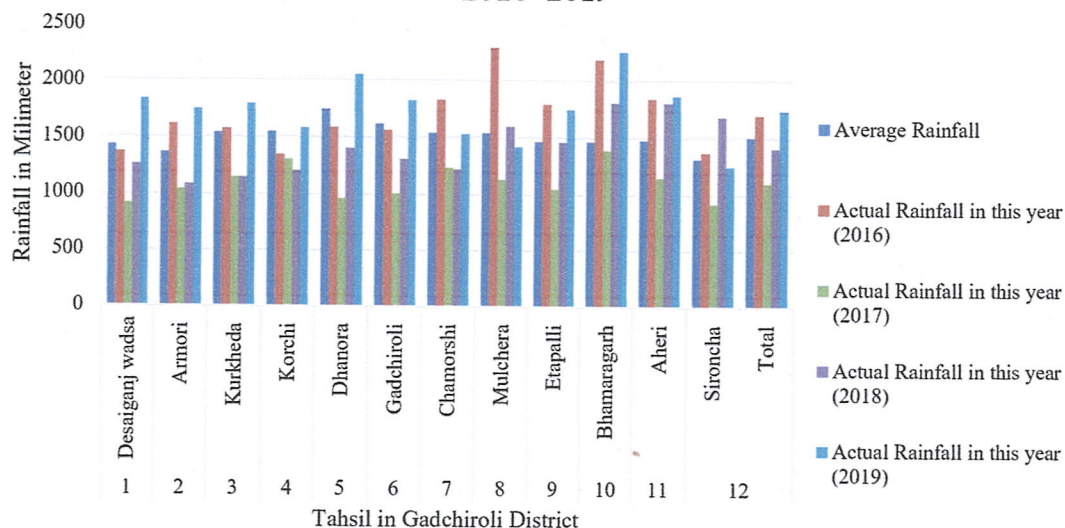

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Increased or Decreased of Rainfall in Gadchiroli District




- Percentage increased or decreased in rainfall in the reference year compared to the average (2016)
- Percentage increased or decreased in rainfall in the reference year compared to the average (2017)
- Percentage increased or decreased in rainfall in the reference year compared to the average (2018)
- Percentage increased or decreased in rainfall in the reference year compared to the average (2019)

Rainfall Distribution in Gadchiroli District 2016-2019



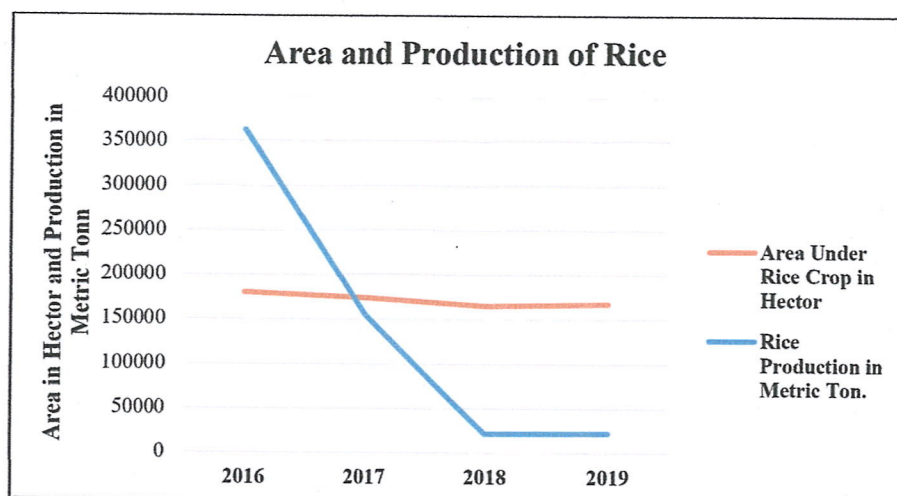

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❖ **Effect of rainfall on area under rice crop and production of rice -**

Sr. no.	Taluka	Year				Year			
		2016		2017		2018		2019	
		Area Under Rice Crop	Rice Production in Metric Ton.	Area Under Rice Crop	Rice Production in Metric Ton.	Area Under Rice Crop	Rice Production in Metric Ton.	Area Under Rice Crop	Rice Production in Metric Ton.
1	Desaiganj wadsa	17676.21	40756	11852.36	16812.55	9929.26	2071.93	11338.17	1912.56
2	Armori	18972.48	34909	19112	10970.23	20226.13	1779.42	20217.13	1762.45
3	Kurkheda	16358	38179	16950	13078.25	16950.00	1728.67	18059.06	1673.42
4	Korchi	10417	16324	10280	5599.34	10279.00	1960.00	11332.00	2154.04
5	Dhanora	18036.48	34682	17506.54	8452.24	17599.58	1890.11	17311.82	2020.24
6	Gadchiroli	18265.39	43440	18481.33	12522.62	18926.20	2069.91	18545.90	2190.21
7	Chamorshi	31240.23	71965	31633.34	38593.62	31509.29	2402.48	31446.03	1813.11
8	Mulchera	5887	19016	6055	11162.83	6448.00	2448.17	6060.00	2513.57
9	Etapalli	15612	24185	15404	9608.02	5897.01	1446.61	5892.01	846.44
10	Bhamaragarh	7089.94	10158	7080.12	5407.04	7007.60	640.52	7007.60	1298.27
11	Aheri	10435.22	14140	9760.80	6294.55	9690.10	1203.22	9689.93	1067.00
12	Sironcha	9726	15303	9879	14407	10018.82	1672.44	9991.00	2834.45
	Total	179715.95	363057	173994.49	152908.29	164480.99	21313.48	166890.65	22085.76



A) Gadchiroli district produce 363057 metric tons of rice on 179715.95 hectares of land in 2016 but 154925.29 metric tons on 173994.49 hectares of land in 2017. The lower rainfall in 2017 compared to 2016 seems to have affected rice production. This shows that in 2017, rice production was only half that of 2016.

B) In 2017, the average rainfall was reduced by 26%, while in 2018, it appears to be 6.5% less than the average. Gadchiroli district produced 154925.29 metric tons on 173994.49 hectares of land in 2017 and 23331.48 metric tons on 164480.99 hectares of land in 2018. Similarly, in 2019, the rainfall was 21.8 percent higher than the average with 24104.76 metric tons of rice being produced on 166890.6 hectares of land.


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C) In the four years from 2016 to 2019, Gadchiroli district received above average rainfall in 2016 and 2019, which had an impact on the growth of rice production, while in 2017 and 2018, lower average rainfall resulted in a decline in rice production.

Conclusion: -

1. Gadchiroli district has an average annual rainfall of more than 60 inches.
2. Gadchiroli district receive 13% more rainfall than the average in 2016 and 21.8% more than the average in 2019.
3. Compared to 2016 and 2019, the average rainfall in 2017 was 26.8 percent less than the average, while in 2018 it improves slightly and again 6.5% less rainfall.
4. To above average rainfall in 2016 and 2019 has had an impact on the growth of rice crop production, while the impact of below average rainfall in 2017 and 2018 has seen a decline in rice crop production.


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