



Government of Maharashtra

**REPORT OF THE COMMITTEE
APPOINTED BY GOVERNMENT OF BOMBAY
FOR
SURVEY OF POSSIBILITY OF DEVELOPMENT
OF SALT INDUSTRY IN
KOKAN STRIP**



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REPORT OF THE COMMITTEE APPOINTED BY GOVERNMENT OF BOMBAY FOR SURVEY OF POSSIBILITY OF DEVELOPMENT OF SALT INDUSTRY IN KOKAN STRIP.

Introduction

In 1955, the Government of Bombay entrusted the work of surveying the Kodinar area of Amreli district for the development of salt industry to the Saurashtra Government Salt Expert Committee. Since the report of this Committee was submitted, the possibilities of carrying out similar surveys of other areas of Bombay State, particularly the Kokan Coastal area, came up for consideration. In view of the industrial backwardness of Ratnagiri district, its long coast line and the existence of small scale salt industry in the district, it was considered desirable to carry out a rapid survey of its coastal area with a view to assess the present position of the salt industry and suggest the manner in which salt industry might be developed in the district on organised lines and also to suggest suitable sites at which new units for salt manufacture might be set up. For this purpose, therefore, the Government of Bombay constituted a Committee *vide* Government Resolution, Industries and Co-operation Department, No. Salt 2357/63903-TEX, dated the 6th October 1958. The Committee consisted of the following personnel :—

1. Shri M. S. Chudgar, B.A. (Hons.) Advocate, M.M.E.A. (India), F.C.S. Chairman (London), Chudgar Niwas, Wadipura, Surendra Nagar.
2. Shri N. T. Dhruve, C/b Shamji Harji Vaish Building, Station Rd., Vice Chairman Porbunder.
3. Shri Vithalrao B. Bagayatkhar, Member, District Local Boards, Vengurla Member. (District Ratnagiri).
4. Shri S. G. Sule, Bombay Village Industries Board, District Organiser's Office, Ratnagiri. Member.
5. Dr. J. D. Joshi, Assistant Director of Industries (Chemicals), Bombay. Member-Secretary.

Terms of Reference

2. Before making its recommendations, the Committee was expected to look into the following questions in particular :—

(i) To assess the present position of Salt Manufacturing Industry along the coast of Ratnagiri district to suggest the manner in which the activities of the existing salt works may be organised in a better manner.

(ii) To enquire into the present position of unlicensed salt manufacturers along the Ratnagiri Coast with a view to ascertain whether their activities can be put on sound footing by forming Co-operative Societies, at suitable places.

(iii) To carry out a rapid survey of the Ratnagiri Coast with a view to suggest suitable sites at which new units for manufacture of salt may be set up on co-operative basis.

(iv) To enquire into all incidental and ancillary matters such as transport facilities etc. for the proper working and development of existing salt works and such facilities as may be necessary from the point of view of proposed sites for starting new salt works.

Working of the Committee

3. The Committee held its first meeting at the Industrial Research Laboratories, Matunga, Bombay 19, on the 17th November, 1958. It was decided that the members of the Committee should visit the existing salt farms located mainly in the southern part of the district. It was also agreed that data regarding rainfall, humidity, etc. at the main port areas of the district be obtained from the Meteorological Department.

4. Accordingly, the members of the Committee toured the southern part of the district during the last week of December, 1958 and visited the following places :—

- | | |
|---------------|----------------|
| (1) Vengurla. | (4) Masura. |
| (2) Shiroda. | (5) Rajapur. |
| (3) Malwan. | (6) Ratnagiri. |

5. At Vengurla, Shiroda and Malwan, the members paid visits to some of the existing salt farms. At Malwan it was suggested to members of the Committee that the creek at Masura and the surrounding area might be of interest from the point of view of salt industry. A visit to the Masura area proved useful inasmuch as it was observed that the area did afford good possibilities of development of new salt works. It was, therefore, decided that during the second tour of the Committee further details of the area be collected. At Ratnagiri also the members visited the existing salt farms.

6. After the preliminary tour of the southern part of the district further information regarding the present position of the existing salt farms, their acreages, production, etc. was collected by correspondence with the Mamlatdars of the different talukas.

7. Although the post of a Surveyor was sanctioned by Government for the purpose of the work of the Committee, a suitable candidate was not available and the post could not be filled in early with the result that the services of a Surveyor were not available to the Committee during the first tour.

8. The Committee held its second meeting on the 5th September, 1959. At this meeting the information about the existing salt industry etc. collected from the Mamlatdars was scrutinised. It was also decided that a second tour of the district be arranged with a view to see the creek areas in the northern part of the district and also pay a second visit to the Masura area.

9. Accordingly, the members of the Committee toured the district again during the last week of December, 1959, and paid visits to the following places:—

- | | |
|--------------|--------------|
| (1) Malwan. | (4) Guhagar. |
| (2) Masura. | (5) Dapoli. |
| (3) Palshet. | (6) Anjarle. |

10. The Surveyor appointed under the Committee also accompanied the members of the Committee during the second tour and he stayed at Masura for a period of about a week to collect further data regarding the site by actual measurements of land and by referring to the village maps.

11. The third meeting of the Committee was held on the 2nd January, 1960, when the various observations made during the second tour were discussed. The present position of salt industry in Ratnagiri district, the broad lines on which improvement of the existing salt farms could be attained and the pattern for further development of the industry by establishment of new salt works were discussed in detail.

Desirability of developing salt industry in Ratnagiri District

12. The Kokan strip of the Western Coastal area covers two districts viz. Kolaba and Ratn. Coast line of these two districts has a length of about 250 miles from Bombay City to the extreme north. The district has well-established salt industry in Uran Mahal and in the Pen taluka. The salt works of Kolaba district cover an area of about 5,850 acres, and their annual salt production is in the neighbourhood of 40 lakhs Bengali Maunds. As against this, in spite of the fact that Ratnagiri district has a long coastal belt, the salt industry in the district has not been developed to any sizeable extent. In fact there are very few places in Ratnagiri district where salt is being manufactured and the total production of salt in the district is also extremely small. In view of this, the problem of development of salt industry in the Kokan strip is in actual fact the problem of development of the industry along the coastal belt of Ratnagiri district.

13. Ratnagiri district has an area of about 5,021 sq. miles and its population is of the order of 17.2 lakhs. On the basis of a per capita consumption of about 14 lbs. of salt per year the total requirements of the district may be estimated to be in the neighbourhood of 300,000 Bengali Maunds per year. As against this annual requirement of the district the production of salt in the district does not average more than about 60,000 Bengali Maunds with the result that the balance of about 240,000 Bengali Maunds has to be obtained from the adjoining district of Kolaba. Such a position in the case of district having a long coast line indicates very clearly that there is hardly any development of salt industry in the district.

14. Ratnagiri district is a truly undeveloped area; there is hardly any industrial development and the bulk of the population is dependant upon agriculture. It is, therefore, essential that all possible efforts are made to encourage the development of the district and in view of the long coastal belt development of salt industry appears to be one of the possibilities in this behalf.

Present position of salt industry in Ratnagiri District

15. At present, salt production is mostly concentrated at Shiroda in Vengurla Mahal in the south western corner of the district. In Shiroda, there are at present 16 organised licensed salt works with an aggregate area of only about 94 acres. Realising the desirability of educating the local salt manufacturers in the techniques of manufacture of high grade salt free from impurities, the Salt Department, Government of India, established in 1952, a small model salt farm at Shiroda for purposes of demonstration. This model salt farm has a total area of about 6 acres and 17 gunthas. The annual salt production of the licensed salt works at Shiroda is of the order of 47,000 Bengali Maunds. Besides the licensed salt works, there are also some unlicensed salt works at Shiroda. Each of these salt works is below 10 acres and their production totals up to about 7,000 Bengali Maunds per year. Thus, the total salt production of all the salt works at Shiroda averages only about 54,000 Bengali Maunds per year. At Vengurla proper also there are two or three salt works covering an area of about 14 acres.

16. In Malwan taluka also there are a few small salt works. The salt works near Malwan proper cover an area of about 14 acres and 17 gunthas and the small salt works at Kandalgaon cover an area of only 36 gunthas. The total production of salt in this taluka is of the order of 5,000 Bengali Maunds.

17. In Deogad taluka salt is manufactured at Vijaydurg and Girye and the total acreage under salt is about 38 acres. In this taluka formerly salt used to be manufactured at Mithbaon and Jamsande on small plots of land covering about $9\frac{1}{2}$ and $6\frac{1}{2}$ acres respectively.

18. In Rajapur taluka salt is manufactured at Mithgavane, the area under salt being about 20 acres.

In Ratnagiri taluka the only salt works is situated near Zadgaon near Ratnagiri proper. The area under salt is about 2 acres and 6 gunthas. This salt works is being run by the Ratnagiri Mithagar Kamgar Sahakari Utpadak Society Ltd.

19. The position of salt manufacture in southern part of Ratnagiri district is summarised in the following table :—

Name of Taluka.				Population.	Place where salt is manufactured.	Area under salt.		Number of salt works.	Estimated production of salt.
						A. g.			B. Mds.
Ratnagiri	..	..	..	1,59,377	Zadgaon	..	2 6	1	
Rajapur	..	..	..	1,46,451	Mithgavane	..	19 33	4	
Devgad	..	..	..	97,918	Girye	..	9 29	2	
					Vijaydurg	..	29 38		
Malwan	..	..	..	1,29,814	Kandalgaon	..	0 36	1	5,000
					Malwan	..	14 17	7	
Vengurla	..	..	..	79,215	Vengurla	..	13 33	3	47,000
					Shiroda	..	94 09	16	

From the above it will be observed that the acreage under salt in the southern part of the district is hardly about 174 acres. In the northern part of the district salt is not at present being manufactured anywhere.

20. During their first tour of the district, undertaken in the month of December 1958, the members of the Committee visited several salt works at Shiroda, Vengurla, Malwan and Ratnagiri and discussed with the salt manufacturers the methods of salt manufacture followed by them. As a result of discussion it was observed that

the majority of salt manufacturers have not been following the correct methods of salt manufacture. Some of the main defects noticed in the procedure followed by them are given below :—

(a) *Preparation of the bed of salt pans.*—For getting good yield and better quality of salt it is of the utmost importance that the bed of the salt pans is prepared properly. The method usually followed is what is known as 'puddling' which consists in consolidating the bed of salt pans by trampling. This makes the bed impervious which results in greater yields and also reduces contamination of salt with mud. It was observed that the salt manufacturers of the district have not been following this generally accepted simple process of making the salt bed.

(b) *Commencement of the season.*—It was observed that the salt manufacturers start their season as late as in January when in actual fact there is no reason why they should not start the season by end of October or early in November. The result of this practice is that sufficient time is not available for the formation of a thick layer of salt in the salt pans which results in low yields and to a certain extent is also affects the quality because with thin layers of salt in the pans (which are themselves not well prepared) there is an increased tendency to scrape the salt bed. The present procedure means that only dilute brine is utilized and no advantage is taken of the evaporation possible during the months of October, November and December.

(c) *Harvesting the salt from salt pans.*—The accepted procedure is to allow a thin layer of salt about $\frac{1}{4}$ " thick, to permanently remain in the crystallizing pans. This avoids scraping of the pan bed and contamination of the salt with clay and is a good saving in annual remaking of the pans. It was observed that the salt manufacturers of Ratnagiri district have not been following this accepted procedure with the result that the salt manufactured by them is almost invariably contaminated with clay.

(d) *Crystallization of salt in salt pans.*—Letting-in of raw brine in the pans should be avoided as it retards the process of crystallization by dissolving out some of the salt that has crystallized. This rule is also not being scrupulously followed by some of the salt manufacturers in the district.

Quality of salt manufactured in the District and its present uses

21. The quality of the salt manufactured in Ratnagiri district is very poor. As already stated above it is contaminated with varying quantities of clay and is usually dark brown in colour. This contamination is due to various faulty procedures detailed above, which are being followed by the manufacturers. If the local manufacturers follow the correct procedure, which should be normally not difficult for them to do, there is every possibility of attaining a vast improvement in quality as well as much greater yields.

22. In this connection it is further observed that as already indicated previously in this respect, the Salt Department of the Government of India have started a small model farm at Shiroda with specific purpose of demonstrating the techniques of manufacture of salt to the local manufacturers. The local manufacturers do not, however, appear to have derived much benefit from the model salt farm. The reason for this may be that in the southern area salt is manufactured in very small plot of less than 5 acres and as such salt manufacture on such a small scale is usually not very economic and leaves a very little profit margin, the local manufacturers do not see a great future in the salt industry. Perhaps, it is for this reason that the price of salt in Ratnagiri district is as high as Rs. 2 per Bengali Maund as against the price of 50 naye paise per Bengali Maund in Saurashtra area.

23. Salt manufactured in Ratnagiri district is being used for edible purposes in Belgaum district and also to some extent in Ratnagiri district itself. It is understood that the darker variety of salt produced in the district finds favour with consumers in the Belgaum district while the local inhabitants of Ratnagiri district prefer the whiter and purer variety of salt obtainable from the salt farms at Uran and other places in Kolaba district. Thus, if the local manufacturers improve the quality of their salt they would have a fairly ready market for their produce. The inferior varieties of salt produced in the district are used by fishermen for preservation of fish.

Nature of the coastal belt of Ratnagiri district and nature of the soil

24. For economic manufacture of salt from sea water it is necessary to have sufficient flat land at a place where sea water can be directly taken in at high tide and isolated from the main source of water by suitable bunds etc. The soil should be such that by 'puddling' it should be possible to render it impervious otherwise there are losses due to percolation. A dry period of about 4 months during which rainfall is almost nil is also required and low humidity and breezy condition are considered as favourable.

25. Although Ratnagiri district has a fairly long coast line of about 170 miles, there are very few places which can be considered as suitable for salt manufacture in the light of the above requirements. The entire coastal belt of the district is rocky with the result that sufficient flat land by the side of a creek is available at very few places. Further, in many places the soil of the coastal belt is sandy and porous and unsuitable for salt manufacture. In fact it is for these reasons that attempts to manufacture salt at any place along the coastal belt north of Ratnagiri has not been made so far ; and the industry has made some progress in the southern portion where the conditions are comparatively favourable. The site near Masura which the members of the Committee found to be suitable for locating a large salt works is also situated in the southern part of the district near Malwan. No such sites could be located anywhere in the northern part of the district except at Vada Mirya, about 2 miles from Ratnagiri city where about 100 acres of land is available for starting a small salt works.

Weather Conditions

26. Data on weather conditions obtained from the Meteorological Department is included in the Appendix of this Report and is summarised below :—

Rainfall.—From the attached Meteorological data (Appendix) it will be observed that the annual average rainfall at places along the coastal belt varies between 85" to 119". The area gets the bulk of the rainfall during the months of June, July, August and September. The average rainfall in the month of October is about 4" to 5" and from November onwards upto May there are dry conditions.

Relative Humidity.—~~Data on relative humidity~~ is available in respect of Ratnagiri city only which is the district place. From the humidity data in the Appendix it will be observed that during the months of October to February the relative humidity varies between 53 to 66 per cent.

Maximum and minimum temperature.—From the temperature data included in the Appendix it will be observed that during the months of November to February the daily maximum temperature varies between 85.5° to 90.7°F and the daily minimum temperature varies between 67.5° and 71°F.

27. In general it appears that the weather conditions along the coastal belt coupled with the breezy conditions are favourable to evaporation of sea brine and consequently favourable to salt industry.

Labour position

28. The bulk of the population of Ratnagiri district is dependant upon agriculture and owing to lack of industrial development the problem of availability of cheap labour is not very acute. In fact development of the salt industry would be helpful in finding useful employment to a lot of idle labour which is required to come to Bombay in search of employment. The existing salt works are, however, very small in size and much of the labour employed is agricultural labour in search of work during the off season.

Pattern of future development of salt industry

29. The question of future development of salt industry in Ratnagiri district is two-fold and should relate to better organisation of the existing salt farms and starting of new salt farms at suitable locations. The position of the existing salt industry has already been described in this report and its chief drawbacks viz. the uneconomic size of the salt farms and faulty methods followed by them have already been elaborated. At first sight it appears that the best course would be to form co-operative societies of the existing salt manufacturers so that the present small salt farms can be re-aligned into comparatively large salt farms and be run on better lines. However, the problem is not as simple as it looks at first sight. In the first place it should be noted that even at Shiroda which accounts for about 75 per cent. of the total salt produced in the district, the overall acreage under salt is only about 94 acres and in this small area there are more than 20 individual salt works. Some time back the Salt Department, Government of India, had made efforts to organise the Co-operative Societies of the salt manufacturers but these efforts were not successful as the manufacturers did not realise the advantages of co-operative efforts. For this reason and also due to the peculiar problems of labour etc. it is doubtful whether fresh efforts to co-operative organisation of salt manufacturers would have chances of success at least at present.

30. Under the circumstances mentioned above, it appears that for the time being efforts should be directed towards improving the salt manufacturing techniques with a view to increasing the yield of salt and improve its quality. After the efforts made in this direction meet with a certain measure of success it is expected that the salt manufacturers would be able to see some future in the salt industry and may even realise the benefits likely to be available from co-operative efforts.

Development of new salt farms at suitable locations

31. *Area to the south of Masura.*—The topographical map of Malwan and surrounding area indicated the presence of a well defined creek known as Kalwali Creek at a distance of about $2\frac{1}{2}$ miles from Malwan Port. This creek goes inland to the extent of about 6 miles, at first almost parallel to the coast and then in the northeasterly direction.

The Gad river meets the creek at a village known as Hadi at which point the creek branches off in the southern direction upto a village known as Kandalgaon. Along this branch of the creek between Hadi on the north and Kandalgaon on the South, there is a vast stretch of marshy land on the Eastern side of the creek. This marshy land extends from the eastern bank of the creek upto the foot of the hills situated at a distance of about $\frac{1}{2}$ mile from the bank of the creek.

32. During the first tour of the Southern part of the district, a local inhabitant suggested that the land by the side of Kalwali Creek might afford possibilities of development of salt industry. As the topographical maps had also suggested the same possibilities earlier, the members of the Committee visited the area during the first tour as well as during the second tour.

33. A tracing of a 1" to a mile topographical map of the Geological Survey of India in respect of the area in question is attached to this report (see Map No. 3). This map shows the Kalwali Creek and the surrounding land. The land found to be suitable for locating a large salt works is also indicated in this map.

34. As already stated above, the land along the branch of Kalwali Creek between Hadi and Kandalgaon is marshy. The land is about 2' below the mean sea level and if a suitable bund is erected it would be possible to take in brine from the creek at the time of high tide. The major portion of the land is marshy and is not at present being used for agricultural or any other purpose. However, a few small plots are being used for cultivation after necessary bunding to keep out the salt water. At times these bunds give way with the result that the plots and the cultivation get flooded with salt water.

35. The soil in the area is of the black-muddy variety and it appears that it can be rendered impervious by the process of "Puddling". The entire stretch of the marshy land may be in the neighbourhood of about 1,000 acres. The area lying between Khajanwadi and Talani was actually measured by the Surveyor and it has been estimated that this area is of the order of 560 acres. A detailed map of this area is also attached to this report (Please see Map No. 4).

36. In general it appears that the area along the Kalwali Creek described above would be suitable for locating a large salt works having an area of over 500 acres. Such a salt works, if run systematically, would yield an annual production of about 3,20,000 Bengali Maunds of salt and would be able to meet the entire requirements of salt for edible purposes in the district. As already indicated previously in this report, the difference between the present production and present annual requirements of salt in the district is of the order of 2,40,000 Bengali Maunds which is made up by purchases of salt from Kolaba and Thana districts. The salt works proposed above would thus, do away with the need of purchasing salt from other districts thereby making Ratnagiri district self-sufficient in regard to its own requirements of salt. This proposed new salt works will not make any material difference to the existing salt works because, as already pointed out salt manufactured by the existing salt works finds its main market in Belgaum district and only smaller quantities are consumed within the district for edible and fish preservation purposes.

37. From the point of view of transport of salt the new site suggested above (south of Masura area) would be convenient because removal of salt from the salt works by means of country craft would be possible. In fact, in the absence of any railway communication in the entire district the proposed salt works will have to depend entirely upon transport by country craft.

38. The proposed salt works will cost about Ra. 2 lacs chiefly for preparing the condensing area, crystallization area, pumping sets and general accessories. The salt works would produce 12,000 to 15,000 tons of salt per year and give work to 200—300 workers.

39. In the course of the rapid survey carried out by the present Committee no other site similar to the one described above, suitable for locating large salt works, was found. However, a few sites for locating small salt works were found in the northern part of the district. These sites are at Guhagar, Palshet and Anjarle.

GUHAGAR.

40. About $1\frac{1}{2}$ miles from Guhagar Town (in Guhagar taluka) along the Guhagar beach, there is a stretch of marshy area admeasuring about 60 acres. There is a very small creek from which sea water gets into this area at the time of high tide. At present the area is not being used for agricultural or any other purpose and would thus be available for salt manufacture. The area is very close to the locality known as Bhandariwadi, inhabited by the Bhandari community. Owing to the policy of prohibition, it is understood that a large section of the local Bhandari community is at present unemployed and as such some of the members of this community have been thinking about utilizing the marshy area for manufacture of salt so as to provide some employment to the local people.

The area appears to be suitable from the point of view of availability of brine but the soil is rather sandy with the result that the yields of salt may not be very high. However, in view of the position stated in the above paragraph, it appears that the area in question may be utilized for salt manufacture as a special case if the local inhabitants come forward with a proposal for forming a co-operative society.

PALSHET.

41. Survey Nos. 134 and 135 of Palshet (Guhagar taluka) lie along the small creek at Palshet and sea water enters these survey numbers at high tide. A bund was erected some years ago to prevent the sea water from getting into the land and for some time the area was being used for cultivation. However, in recent years the bund has broken down and rendered the area unsuitable for cultivation. The total area of the two survey numbers is of the order of about $5\frac{1}{2}$ acres and as the soil is fairly satisfactory, the area can be used for locating a small salt works. The production from such a salt works would be small and be sufficient only for Palshet and a few surrounding villages.

ANJARLE.

42. At Anjarle in Dapoli taluka there is a small creek and some survey numbers of Anjarle village are marshy and get flooded with sea water at high tide. The soil of the area is fairly satisfactory from the point of view of salt manufacture and if bunding is done it appears that the area can be utilized for making salt on a small scale. The total area of the land is of the order of 24 acres and 14 gunthas.

Maps indicating the lay-out of the three sites described above are attached to the report (Map Nos. 5, 6 and 7).

RATNAGIRI CITY.

43. At Vada Mirya, about 2 miles from Ratnagiri City, there is an area of about 100 acres which may be suitable for locating a small salt works.

Summary

44. The requirements of salt of Ratnagiri district are of the order of 3,50,000 Bengali Maunds per year on the basis of a per capita consumption of 14 lbs. At present salt is being manufactured at a number of places in the southern part of the district chiefly at Shiroda and Vengurla. The existing salt works are very small and the total area under salt is hardly about 174 acres and the production is as low as 60,000 Bengali Maunds. The quality of the locally produced salt is far from satisfactory and the reason for this is the faulty methods of salt manufacture being followed. Unless the salt manufacturers improve their techniques and get better yields of salt they will not see any great future in the salt industry and will not see the advantages of forming co-operative societies with a view to realign the existing small plots under salt into comparatively well organised medium sized salt works. At the present stage, therefore, the emphasis should be on improving the techniques of manufacture and improving yield of salt.

45. The rapid survey carried out by the Committee revealed the existence of site south of Masura (in Malwan taluka) which would be suitable for a large salt works (having an area of over 500 acres). A model

salt works can be located at this place to produce about 300,000 Bengali Maunds of salt of good quality thereby making the district self-sufficient in regard to its salt requirements. Another smaller site of about 100 acres was also located at Vada Mirya near Ratnagiri Town.

46. Salt is not being manufactured anywhere in the northern part of the district. The Committee had located three sites at Palshet, Guhagar, Anjarle respectively, at which small salt works can be started to cater to the needs of surrounding areas.

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|---------------------------------|-------|---|
| 1. Shri M. S. CHUDGAR | | Chairman. |
| 2. Shri M. T. DHRUE | | Vice-Chairman. |
| 3. Shri VITHALRAO B. BAGAYATKAR | | Member. |
| 4. Shri S. G. SULE | ..... | Member. |
| 5. Dr. J. D. JOSHI | ..... | Assistant-Director of Industries (Chem.), Member-Secretary. |



APPENDIX.

METEOROLOGICAL DATA.

TEMPERATURE, RAINFALL, WIND VELOCITY AND HUMIDITY OF THE RATNAGIRI DISTRICT.

Month	Air Temperature.		Rainfall.		Mean Wind Velocity m.p.h	Relative Humidity per cent.	
	Mean of daily Maximum. °F.	Mean of daily Minimum °F.	Mean monthly total inches.	Mean Number of Rainy days.		8.00 Hours I.S.T.	17.00 Hours. I.S.T.
January	86.7	67.1	0.08	0.1	5.8	59	60
February	85.5	67.5	0.04	0.1	6.5	64	61
March	87.0	72.2	0.03	0.1	6.7	70	66
April	88.9	77.0	0.10	0.3	6.9	73	69
May	90.3	79.8	1.10	1.4	7.3	72	69
June	86.5	77.1	30.41	20.5	7.6	83	81
July	83.7	75.9	33.85	26.0	8.9	87	87
August	83.4	75.5	19.13	23.3	7.5	87	85
September	83.9	74.7	11.82	15.0	5.3	85	81
October	83.2	74.4	4.33	5.4	5.2	76	75
November	90.7	71.0	1.01	1.3	5.5	58	63
December	88.6	68.1	0.15	0.3	6.0	53	59

RAINFALL AT VARIOUS STATIONS.

RATNAGIRI DISTRICT.

STATION.	RAINFALL IN INCHES (Mean Monthly Total)												ANNUAL (Inches)
	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Octr.	Nov.	Dec.	
1. Ratnagiri ..	0.08	0.01	0.03	0.10	1.10	30.44	33.85	19.13	11.82	4.33	1.01	0.15	102.08
2. Vengurla ..	0.07	0.03	0.05	0.35	2.13	32.74	32.99	18.81	9.85	4.38	1.18	0.17	102.55
3. Malwan ..	0.04	0.05	0.01	0.26	1.73	23.99	28.01	14.45	0.02	3.59	1.17	0.16	85.48
4. Deogad ..	0.08	0.01	0.01	0.18	1.53	27.42	27.16	15.91	10.80	4.06	1.14	0.13	88.46
5. Rajapur ..	0.08	0.04	0.02	0.16	1.42	34.22	46.39	27.28	13.79	5.51	1.30	0.10	130.31
6. Guhagar ..	0.06	0.03	0.00	0.17	1.28	28.41	34.32	18.48	11.79	3.54	0.81	0.12	99.01