CHAPTER - I

POLITICS, GEOGRAPHY AND AGRICULTURE

Geo-Political Situation : Like the other Mughal provinces of India, the political scenario of mid-eighteenth century, Gujarat, was marked by anarchy and confusion as a result of the weakening of the central authority. The endless strifes amongst the Marathas themselves and also with the Mughal viceroys was an important feature of the political order of the eighteenth century Gujarat.

The Maratha tilt towards Gujarat may be traced to the raid of Surat by Shivaji in 1664 A.D. Advancing their claims of Chauth and Sardeshmukhi, they gradually acquired soveriegnity in Gujarat. By about the middle of the eighteenth century Damaji Rao Gaekwad had established his authority over the greater part of Gujarat and Kathiawad. In 1752, he was compelled to make over half of his acquisitions to the Peshwa by the partition treaty.(1) In the memorandum of the partition treaty the province of Gujarat was divided into well-defined three geographical areas -

(a) Territories south of the Narmada ;
(b) Territories between Narmada and the Mahi ;
(c) Territories north of the Mahi.

The territories which later formed the Kheda Collectorate (under the British) were included in the third division and were shared between the Gaekwad and Peshwa as follows -

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1. For detailed list of the division, see, Selection from Baroda State Records (Marathi) Vol.I, Pp.52-58.

Half the pargana of Petlad including the Thana at Borsad, Chauth of Cambay, Mehamdabad, Thasra, Thamna, Balasinore forming the Peshwa's share; Matar, Nadiad, Mahudha and Kapadwanj forming the Gaekwad's share. For administrative purposes the Peshwa combined Thasra, Mehemdabad, Thamna, Balasinore and Virpur under a new sub-division called the Panchmahals. Again, for the management of all his territories north of the river Mahi, collectively called 'Prant Gujarat Mahi Uttar Teer', the Peshwa had his headquarters at Ahmedabad. These were farmed to the Gaekwad for a period of five years in 1800 and for another ten years in 1805.

As far as the British are concerned their first real connection with Kheda district began in 1803 A.D. A year earlier the Peshwa harrassed by Yashwant Rao Holkar had sought British protection, in lieu of which, besides other connection's he had handed over to the latter, the Napaad group of villages (Treaty of Bassein, 1802). Thereafter in 1803 grateful for the timely help given by the British in removing his dissident half-brother Kanhoji, and also for the maintenance of the British troops, Anand Rao Gaekwad added Nadiad, Matar and Mahudha and also granted in perpetual gift the fort and town of Kheda.

Till 1805, the above-mentioned territories alongwith others acquired in 1803 viz. Dholka, Dhanduka, Ranpur and Ghoga were placed under the Political Resident stationed

at Baroda viz. Major Walker. In that year a collector was appointed with jurisdiction over the ceded tracts to the North of River Mahi, with his headquarters at Kheda.(1.a)

There was a further increase in British possessions in 1817 when Anand Rao added Mehamdabad, Alina, Thasra, Antroli and half of district of Petlad, Kapadwanj and Bijalej were received in exchange for district of Bijapur in North Gujarat. At the same time Ahmedabad was also handed over by Fatehsingh Gaekwad. In 1818, the territory North of River Mahi was divided into the two districts of Kheda and Ahmedabad. In 1830 Kapadwanj was included in Ahmedabad and Kheda became a sub-collectorate under the collector of Ahmedabad. In 1833 A.D. Kheda and Ahmedabad were again separated.

1.a It may be mentioned here that even in ancient times Khetaka (or modern Kheda) was usually referred to as the headquarters of an Ahara or district or as headquarters of a mandal or group of districts. According to the Puranas Chakravati was the old name of Khetaka. For Ref. see H.S. Atlekar, A History of Important Ancient Towns and Cities in Gujarat and Kathiawad. From earliest times to about 1300 A.D. Reprinted from 'The Indian Antiquary' Volumes III, IV, 1924-25 (Bombay, 1926), P.20.

From the above it is clear that the Kheda collectorate was first formed in 1805 A.D. Again this differs from the modern Kheda District in the sense that the Parganas of Cambay and Balasinore and half of the Petlad Pargna did not fall under its independent jurisdiction.

Geographical Boundries : The eastern boundary of the Kheda Jilla was formed by the River Mahi extending about 50 miles from Balasinore to Oometh. The Western boundary was formed by the Kharee river until it joined the Sabarmati when the latter river became the boundary for about 10 miles. On the North, the Jilla was bounded by parts of the Mahi Kantha and the Balasinore pargana. The Gaekwad's share of the pargana of Petlad formed the greater part of the Southern boundary and for ten to twelve miles it was formed by the river Mahi.

Soil : The soil of the Kheda district could be categorised under four main heads -

Goraroo Zamin, Kiarda, Black or Kali and Bhatha.

Goraroo ; the predominant soil of the region was of two kinds - one, a very superior quality, perhaps the very best of its kind being deep, cohesive and retentive of moisture. It accounted for nearly ninety percent of the arable land of the Parganas of Petlad and Nadiad. The

second type of Goraroo soil was not so rich and was more sandy and rather coarse and friable. It could be found to a large extent in Thasra, Kapadvanj and Mahundha.

Kiarda : or rice lands could also be divided into two - one, Besur or a mixed blakish loamy soil found in Nadiad and Petlad. It was more productive than the second type viz. - the white or converted Goraroo which was found in parts of Nadiad and Matar.

The black or Kali soil was quite inferior in quality than the one found in Broach. Also known as Mal; it could be found in Matar, Kapadvanj and Thasra. The bhatha or the rich alluvial soil in river beds were not very extensive except those located in the south of Kheda, of the Watruck river.

Method of Cultivation :

Our information regarding the implements used in husbandry in the Kheda Jilla is quite scanty and scattered. Almost all the crops of Gujarat in general, and that of Kheda, in particular, were shown with a very simple drill attached to an instrument resembling a rake drawn by bullocks.(2)

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2. Revenue Department Diary (Henceforth R.D.D.) 1819 No. 143, Maharashtra State Archives, (Bombay) P.3276; Ibid., No.130 P. 2777; Ibid., 1820, No.153, P. 1891.

The ploughs in use appear to be of 2 kinds - one for the black soil in which wheat was grown and the other for lighter soil in which all other grains and pulses were grown. However there was very little difference between the two - the former being merely a little heavier requiring two or three pairs of bullocks to draw it, and its furrow, deeper by some three inches.(3)

The European travellers seemed to have found the native ploughs rather crude and awkward.(4) One states, while speaking on the whole of India that the ill-formed plough used by ryots was often only a piece of crooked wood-shod iron and drawn by a pair of ill-yoked oxen.(5) The single plough only was known in the Kheda Jilla,(6) and only oxen were yoked to the ploughs here as well as in Broach,(7) while in the Ahmedabad Jilla buffaloes

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3. Revenue Department Volumes (henceforth R.D.V.) 1851, No.22, Maharashtra State Archives, Bombay P.12.

4. R.G. Wallace, Memoir of India, P. 93; British Heber, Narrative of a Journey through the Upper provinces of India from Calcutta to Bombay (London) P. 325.

5. R.G. Wallace, Op.cit., P. 93.

6. R.D.D. 1820, No. 153, P. 1890.

7. Ibid., 1819, No. 130, P. 2776.

were sometimes used.(8) The oxen used for drawing the plough were usually of the Kathiawad breed and were strong and well-suited for tillage.(9) The ploughs were seldom drawn by more than one pair of oxen.

The implements for reaping and threshing, also appear to have been traditional. The reaping hook was only a short crooked knife while the grains in the fields were threshed out by means of oxen that were driven around a threshing floor of baked day.(10)

The least number of ploughs possessed by one cultivator in the Kheda Jilla was half, i.e. one bullock, the mean was two or three and the greatest was five to six ploughs.(11) The greatest number of ploughs possessed by one cultivator in the Ahmedabad and Broach collectorships was twenty and ten respectively(12) which shows that the cultivators of these two Jillas were better off than those in the Kheda Jilla.

The information collected by the survey of 1820-27 of most parts of the Kheda Jilla helps us to form an idea of the agricultural stock, cattle and general resources of its different parganas. The data contained in this

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8. Ibid, 1819, No.143, P.3279.
9. R.D.V. 1851, No.22, P.13.
10. R.G.Wallace, op.cit P.93.
11. R.D.D. 1820, No.153, P.1889.
12. Ibid, 1819, No.130; P.2776; Ibid. No.143.

survey are shown in table No. 1 in the end of the Chapter.

A study of the data recorded in the table 1 indicates that the Petlad pargana was not only the largest pargana but it appears to have had the largest number of ploughs also. Horned cattle including Buffaloes, oxen and cows seemed to be more popular than sheep, goats and horses. Each plough cultivated upon an average 16 acres of land and paid an average revenue of Rs.67½ in the Petlad Pargana. In the Nadiad Pargana each plough cultivated 14 acres of land and paid an average net revenue of Rs.49. In the Mahudha pargana each plough cultivated 13 acres and paid Rs.42. Considering the number of ploughs in each village (average 93) the carts and cattle, it could easily be informed that this pargana was economically very strong and had attained high agricultural means.

On the whole the implements used in husbandry by the cultivators were of the same description and designs as what their forefathers had used before them. No improvements seem to have been effected to any of them. A few American ploughs were brought here in 1843, two of which were given to the cultivators for trial but they complained that they were clumsy and unsuited to native management. The furrows formed by them were very wide and required much additional labour to level the surface.

Besides, they also claimed that the repair of one of these ploughs would cost as much nearly as to make a new one on the old design. The collector Mr. Kirkland stated, in a letter to the then Revenue Commissioner (dated 23rd Dec., 1844) that the main reason why little improvements could be made was because 'the cultivators were averse to innovations' and they considered the introduction of any improved implements an imposition.(13) How far this was true is difficult to say - but the fact remains that the desire to change as well as lack of skillful knowledge of both the artisans and the cultivators perhaps prevented notable changes in the agricultural implements.

There were two kinds of vehicles used by the cultivators for the purposes of transport and husbandry viz. the Gara and Renkla.(14) Gara was stated to be the vehicle first invented by the natives of the country but being expensive and complicated it was not so general used as the Renkla. A cart of the Gara description was priced from Rs.60 to Rs.80, while that of the Renkla from Rs.30 to Rs.40. Notwithstanding, the great weight and clumsy make of the wheels, the Renkla was chiefly preferred for heavy load of forage which was transported without risk of upsetting on an uneven road.

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13. R.D.V. 1846; No.8, P.62.

14. R.D.V. 1844, No.27/1584; P.61; Ibid, 1851, No.22 P.12. For a detailed description of these carts see Ibid.

Generally speaking these carts were well adapted to the state of the sandy tracks at that time. There was another point worthy of notice in these carts viz. the apparent and studied arrangement in them to throw as much of the load as was possible not only in the rear of the axle but below the centre so as to tend to force the cart of itself forward. Hence for equalising the load and securing a good balance, these carts were well adopted for carrying heavy loads.

In 1844 the Collectors of Gujarat and Konkan were directed to ascertain whether any measures could be advantageously attempted for the improvement of carts. It was generally viewed that it was not necessary to attempt any alteration in the existing mode of conveyance of merchandize and produce as the carts, in use, though clumsy seemed to be well suited to the nature of the roads and circumstances of the country.(15)

Methods of Irrigation: Development of irrigational facilities was necessitated in the Kheda Jilla as well as in the whole of Gujarat province so to say, on account of the scant supply of water, as well as the uncertainty of the monsoon.

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15. Ibid.

Lands in the Kheda Jilla were artificially irrigated by means of wells, tanks and river courses. Wells appear to have been the most widespread and the only permanent means of irrigation throughout the Kheda Jilla. In comparison with Broach, both Kheda and portions of Ahmedabad were very favourably situated for irrigation by wells, the extensive beds of sand and gravel which permeated the two collectorates, enable the cultivators in many places to procure water by digging rude pits for it to the depth of but a few feet.(16) The water from the wells was drawn by oxen in leather buckets attached to ropes made of the same material. The buckets were of two forms and worked in two different ways depending on the depth at which the water carried was from the surface, thus distinguishing two different types of wells.(17)

The first type was distinguished by the name of Soondea or shallow. Its bucket was made to contain about 75 gallons of water and used to the depth of 20 or 25 feet. The water was emptied and bullocks drive by the same person. The quality of water raised during a day depended

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16. Alexander Mackay, Western India - Reports Addressed to the Chamber of Commerce Ed. James Robertson (London, 1853) P.180.

17. R.D.D. 1813 No.86, P.1262-1271. This Report gives a detailed description of the working of these wells.

on the depth of the well and the degree of excellence of the cattle employed, good oxen would draw about 300 buckets from the deepest well and about 500 from the most shallow.

The second type of well was known by the name of Ramia. Its bucket was made to contain about 50 gallons, but the depth of the well often rendered it necessary to reduce the size of the bucket. Where the work was easy about 200 buckets could be drawn, where the well was very deep about 150.

From the receiving cisterns the water was led in small trenches, dug on the earth on formed on the ridge of a mount raised for the purpose, to the field it was destined to irrigate, which being laid out in small plots, each plot was successfully flooded one after the other, a man being employed with a hoe in his hand to watch the progress of the water and to close the little embankment of one plot and open that of the next as soon as required. Where a ditch or ravine crosses the land the cultivator either built up a wall from the bottom and carried on his water course on the top of it or joined his water courses by the brough of wood.

The cost of construction of a well in the Kheda Jilla of the dimensions to permit two leather bags being used

for drawing water, was estimated at Rs.432 and on an average could be completed within two years and irrigage eight beegas of land.

Besides the wells, another mode generally in use was to raise the water to a height of four or five feet with the help of a machine called chursun. The machine was worked by manual labour with the assistance of a lever playing across a coarsely constructed frame. From one end of the lever a rope was attached to the large end of the trough which when sunk into the pool or reservoir from where the water was to be drawn was raised by the workman putting down the other end of the lever by a small rope attached to it, the spout of the trough never being separated from the higher channel in which the water was to be conveyed. This mode of irrigation was much pursued after the rainy season or in the event of a long interval of dry weather, the tanks and pools at that time generally affording a supply of water sufficiently elevated to render it practicable.

With regard to tank irrigation, it does not seem to have been very popular as it was supposed to have been in former times. Describing what was meant by a tank in Gujarat, Alexander Mackay states that, "they are of the simpliest and rudest construction; for the great bulk of

the tanks of Gujarat are formed by a bank being thrown across the lower end of a small valley or by taking advantage of a natural depression of the surface, the defects of which are repaired so as to form it into a basin for the retention of the water supplied to it by the rains".(18)

Regarding irrigation from rivers, we find that the beds of rivers in the Kheda Jilla, were generally deep and therefore water courses seldom or never dug up.(19) Moreover, there were no rivers of sufficiently copious supply to admit of their being turned to the purposes of irrigation. The water of the Shedhee river, as such was not used for irrigation as it contained a deleterious kind of salt which when precipated on the soil rendered it almost unfit for cultivation. Water having these properties was said in Gujarat to be '<u>chopdee</u>' and cultivators were cautious enough not to bring it on their fields.

The water of the other rivers such as Sabarmati and Watruk was sweet and good but owing to the sandy and broken nature of their banks was not everywhere available for irrigation. The Kharee river which formed one of the boundaries between this and the Ahmedabad Jilla might be

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18. Alexander Mackay, op. cit P.187.

19. <u>R.D.D.</u> 1820, No.153, P.1858.

considered to be an exception. It often filled in the rains to the top of its banks and then the water was conducted by ducts to the rice fields in its neighbourhood,[20] especially during the months of September and October.[21] The right of the villages to draw water was limited according to their respective terms, as regulated.[22] The Loonee river likewise afforded the means of irrigation to some villages.[23]

Apart from being conducted by ducts, water was often drawn from the rivers in the same manner as from wells.[24] Certain small wells called Dhecorees were frequently opened on the banks of the river Watruck and Kharee which were filled from the water of the rivers. The cost of making of one was estimated at Rs.224 and it had the power of irrigating on an average 8 beeghas of land.

On the whole we find that wells formed the most widespread means of irrigation specially because the tanks were exhausted of their supplies just before the commencement of the hottest and driest season.[25] The depth of water

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20. Ibid.
21. Alexander Mackay, op.cit P.180
22. Ibid.
23. Ibid.
24. R.D.D. 1820, No.153, P.1858
25. R.D.V. 1843, No.78/1520, P.108.

and the local facilities for the construction of wells differed from pargana to pargana; sometimes in one pargana itself the facilities for well irrigation varied. For instance, in the Mehmoodabad Kasba, the water could be obtained in the greatest abundance at only 14 or 18 feet depth while in one of its villages Chapra, the water laid so deep that the cost of a well could not have been less than 500 or 600 rupees.(26) From the date collected by the survey in 1820-27 one can form an idea of the extent of irrigated land as well as the number of wells and tanks of use in each pargana in which the survey was conducted. (See Table No. II) ~~in Appendix~~. From this table it is clear that only a very limited area of arable land was under irrigation.

Also, that 40% wells were in a bad condition, although there still remained large number of wells in that district for irrigational purposes. That in adverse years, irrigational facilities helped can be seen from the report of the Collector of Kheda of 1840-41 in which year due to scarcity of rain a resort to irrigation saved Rs.2 lacs.

We have hardly any direct information to study the development of irrigational facilities under the Maraths. They seemed to have devoted very little attention towards

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26. Selections from the records of the Bombay Government. (henceforth S.R.B.G.) No. XI, P.59.

this important source of agricultural improvements. Besides them, the British too share the blame for neglecting this field. We have the statement of one of its officers in 1851 criticising its irrigational policy. "So far the public and irrigational works in Gujarat have been permitted to fall to ruin that to bring them up now to their former state of efficiency would require the expenditure of at least one year's revenue of the whole provice.(27) This could have been largely avoided provided concrete steps had been undertaken to maintain in a state of repair the works which had already been constructed for irrigation. This was because tanks and wells, especially the former were vulnerable to get into a state of disrepair soon if left to themselves from which they could be resecured only at a considerable cost.

Under the Marathas, the Patels and the people themselves looked after the repair of village wells and tanks.(28) The practice of the Government was not to interefere with the internal affairs of the villages, every department, including the above, was thus conducted by the Patels. However, under the British, the Patels were deprived of most of their responsibilities and they ceased to look to themselves alone for the preservation of their villages.

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27. Alexander Mackay, op. cit P.184

28. R.D.V. 1825, No.7/117, P. 780.

The effects of this change could be seen in the case of one instance viz. the state of the public wells. Without having resources in their hands, they appealed for assistance to undertake the repair of wells, to the authority that had superceded them. But, inspite of claiming to have established as enlightened administration, the British government failed to provide adequate assistance and support for the encouragement of irrigation.

The cultivators in Gujarat were not always in a position to undertake by themselves extensive improvements. It was therefore only in cases of extreme necessity that they were found to exert themselves to repair the wells and tanks. The assessment policy of government was also a serious discouragement. Whatever expense and labour a cultivator may have incurred in irrigating his land either by sinking a well or making a water course from some passing stream before he had been repaid the expense so incurred, he was called upon to pay an exhorbitantly increased rent.(29) Thus owing to the negligence of one party and the unwillingness and inability of the other no concrete steps were undertaken by government till the year 1844. In that year however it addressed a circular to the different collectors of British Gujarat embodying a

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29. R.D.V. 1840, No. 5/1089, P.20

set of rules the object of which was to afford a liberal degree of encouragement to the construction and maintenance of wells.(30)

These rules, though affording encouragement to well irrigation were implemented only to a limited extent to all intends and purposes. In a statement on the amount of money spent on irrigational and other public works for 15 years from 1835 to 1850 we find that the average amount spent on irrigation for the first five years was Rs. Rs.25761217½ the next five years Rs.234.15.1½ and the last five years Rs.856.15.6.(31)

Connected with the subject of irrigation is that of drainage. About the year 1830 it was found that not only were parts of Kheda district excessively unhealthy owing to the rain water stagnating in many places, but also that during the monssons inundations so often destroyed the crops that large remissions had certainly to be given and frequent heavy losses made the cultivators poor. Consequently Mr. Jordan, the Deputy Collector in Ahmedabad was directed to plan and carry out a system of drains, This work he executed with great skill and at a very low cost between the year 1831 and 1840, during which period

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30. For a detailed account of these rules see R.D.V. 1844, No.131/1688, P.179-181.

31. R.D.V. 1852, No. 173, P.451.

14 drains were excavated. The immediate effect of this measure was that not only the district became healthier but that the revenue rose considerably and remissions greatly decreased. Between the years 1836-37 and 1840-41 a total of Rs.20,860 was the amount of estimated benefit to the public revenue in not having to grant remissions on account of inundation.(32)

Cropping Pattern : The collectorate of Kheda was generally acknowledged as one of the most fertile in the whole of Gujarat. And this was rightly so for it produced a large variety of crops ordinary as well as the superior description or 'maliat'. The Seasons for the sowing and harvesting of crops were three Kharif, which applied to the rainy season; rabi as the Winter and oonalloo or haree as the Summer season. The Kharif harvest consisted principally of bajree, jowar, pulses kodra and all the poorer kinds of grain, rice and tobacco. The rabi or the second harvest consisted of wheat, barley, late tobacco, gram and kussombee or safflower. The haree or the 3rd harvest consisted principally of late jowar, kang, channa and several vegetables cultivated by well water.

If we examine Table No.III (a & b) we find that it were the Kharif crops and that too, grains in the main, which formed the dominant produce of the Kheda Collectorate

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32. Ibid. 1843, No. 46/1488, P.212-13

accounting for more than three - quarters of the land cultivated. Bajree was an essential article of food in Gujarat.(33) It was sown about the end of Asad or mid July which was reckoned to be the best period, if the weather permitted mutt and moong were often sown with Bajree. It was generally harvested in October. The average yield per beegha of Bajree and other grains was generally from 19-20 maunds valued at Rs.20. The cost of cultivation was Rs.2 for manure and Rs.2 for labour, the governments share ranged from Rs.3 to Rs.5.

Though Bajree was generally priced at 40 seers a rupee, the price rose whenever there was scarcity of rain. For instance, in 1802 it was stated to be 32 or 34 seers a rupee(34) while in 1824 38 seers a rupee(35), in both cases fluctuations being caused due to failure of rains.

Jowar was sown about the middle of Shrawan or early in August if the season admitted. It was a fine large grain growing to height of 8 or 10 feet. It also formed

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33. R.D.D. 1820, No. 157, P.4033
34. Bombay Political Correspondence Daftar No.4, Volume 573, No.I, Central Record Office, Baroda (Henceforth CROB) P.315
35. R.D.V. 1824, No.12/96, P.335

an important article of food in Gujarat and in many respects resembled the maize and guinea corn.(36)

The other useful grains include Kodra, Bantee, Bawta, all of a nutritious quality. They were planted in June or in the earliest season of the rains and harvested in September. They were generally two or three feet high; when ripe their golden, purple and varied tints gave the country a rich appearance.(37)

A number of the smaller kinds of pulses and such other grains as were not generally used by the natives as a principal article of food were known under the appellation of Kathol. These grains consisted of Gowar, Urad, Jalu , Toor, Mutt and Moong. They were sown as early in the season as possible but not harvested till the end of December. This was primarily due to the fact that most of them were generally sown with Jowar and Bajree, and growing to a small height they did not begin to ripen till the shade which the above grains occasioned was removed by their being reaped.(38) Mutt served as a nutritious food for cattle as well.(39)

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36. James' Forbes, Oriental Memoires, Vol. II, (London)(1834), P.35.

37. Ibid.

38. P.R.D.D. 1820, No.157, P.4032

39. James Forbes, op.cit P.35.

A part from Bajree, Jawar and Kodra, Rice was produced in all the Parganas of Kheda Jilla. There were six varieties of rice generally grown in the Kheda Jilla viz. Pun Khalee, Kummod, Sootussal, Elaiychi, Vanklav and Sattee of which the first two were of a superior sort and grown on the richer description of rice lands and required more irrigation.(40) There were two customary ways of sowing rice viz. first by sowing the seeds in beds with a view of afterwards transplanting the shoots and secondly by sowing the fields at once by means of the drill plough. The first methodx was more common in use.(41) It was very necessary to examine the rice seed before it was sown, for if it was more than 2 years old it did not shoot when sown.(42) The seeds beds were prepared in May and the sowing commenced in the earliest season of the rains or in June. Transplanting was done about the middle of July and the grains generally ripened in October. The cost of cultivation of rice of one beegha was Rs.3 to Rs.8 in manure and Rs.5 for hired labour; one beegha produced about 25 maunds valued at Rs.25 out of which the government was paid Rs.3 to Rs.5.(43)

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40. R.D.V. 1843, No. 4/1466; P.114.
41. This was unlike the custom followed in Broach where the greater part of the rice was sown with cotton with the drill plough - see R.D.D. 1819, No.130; P.2778.
42. R.D.V. 1843, No.4/1446; P.114.
43. List No.11, Kaira Rumal, Pune Archives, (Henceforth, P.A.) PUNE.

To improve the quality and quantity of rice grown in the Kheda Jilla an experiment was tried with the American rice seed in 1840.(44) The seeds being old, the grains did not germinate and thus the experiment proved a failure.

Wheat, barley and gram were not so extensively grown as bajree and other grains. They being essentially rabi crops, were generally sown by the end of October and beginning of November and harvested in March. Wheat if sown on fallow land yielded an average return of 28 to 32 maunds per beegha, if sown as an after crop 25 to 31 maunds and if not irrigated about 10 to 16 maunds.(45) A clear cold air with moderate dews was favourable to the growth of wheat while fogs and rain which almost annually fell in Gujarat in the cold season were considered injurious especially if they took place after the formation of the ears of corn.(46)

Apart from grains, the Kheda Collectorate produced quite a variety of commercial crops, the main being indigo, tobacco, sugarcane, cotton, jeera and opium.

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44. R.D.W. 1843, No.4/1446; P.114.

45. S.R.B.G. Vol. XI; P.70-71.

46. R.D.D. 1820, No. 157, P.4036.

Indigo - Indigo cultivation had formed a valuable commercial crop in Gujarat during the sixteenth and seventeenth centuries in Gujarat.(47) It was extensively raised with the greatest possible success. It may be mentioned that about the middle of the 18th century, its production had declined notably. Three causes seem to have been responsible for its decline - political, economic and prejudicial.

The conquest of Gujarat by the Marathas created uncertainty in terms of revenue administration, further the decline in the demand for indigo in the foreign markets and the increase in the prices which also influenced its demands in the home markets were determining factors for the decline of the cultivation of indigo. The demand was so much reduced that annual remissions of revenue had to be made to the indigo cultivators to enable them to meet the government demands against them. Apart from this the price of indigo fell so low, that its culture was rendered unprofitable.(48) Lastly the prejudices against the cultivation of indigo also led to its decline. It is said that about the 2nd half of 18th century a Maharaj (Saint) visited Gujarat who proclaimed the cultivation of

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47. R.D.V. 1828, No.26/232, P. 289. Thevenot in his account indicates the production of indigo in this region. (Ed. S. Sen. P.18).

48. S.R.B.G., XI.

indigo by Konnbies to be a great sin (pap) inasmuch the preparation of the dye caused the death of the minute animal which fed upon the shrub.(49) Moreover the occupation of preparing indigo seems to have been looked down upon by the inhabitants as unclean from its bearing a reasemblance to the labour of the Dhers and it is stated that the higher order of Brahmins would refuse to dine with those engaged in the manufacture and from the same cause they would find it all the more difficult than the rest of the caste in getting their children well married.(50) So, all these causes combined to contribute a decline in the cultivation of indigo in the late 18th and early 19th centuries, the same area began to be used for the cultivation of tobacco, rice and sugarcane.

By the 1820s conditions again became quite favourable for the revival of the culture of the indigo plant on an extensive scale with a prospect of great advantage. The price of indigo rose quite high by this time as a result of an increase in its demand. Thus attempts were made by the British government to revive its cultivation.

Gujarat was found to be all the more suitable for the seasons here were quite regular and consequently the cultivation of indigo would not have been liable to the

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49. S.R.B.G.; No.CXIV, P.145.

50. R.D.V., 1840, No.5/1089, P.40.

frequent accidents which rendered speculations in indigo so hazardous in Bengal. Abundance of soil suited to grow indigo (in the Kheda district Borsad and Napad, were the most suitable regions) as well as an enterprising industrious population anxious to engage in any undertaking that promised to improve their condition were also positive factors.

A glance at Table No. III.b shows that the cultivation of indigo did not increase to the extent that was desired or expected. There were two main wants from which its cultivation appears to have suffered. One was the want of manure which was greatly felt, the only supply obtainable being the stock of dung accumulated by the ryots themselveswhich was usually mixed with the black mould from the beds of the tanks.(51) The want of vats for the extraction of the dye was another factor.(52) A set of vats was priced at about Rs.275 which was quite expensive.(53) Perhaps it was a lacuna of the above wants which promoted the cultivators to adopt a very careless attitufe towards the preparation of the dye. The quality therefore was quite inferior and bore a lower price in the market as compared with the more skillfully

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51. Ibid; 1841, No.11/1240; P.50
52. S.R.B.G; No.XI; P.94
53. Ibid.

manufactured article of Malwa, Khandesh or Bengal.

Regarding the method of cultivation[54] of the indigo plant, it was sown in land of goorarоо soil and the field intended for it was to be manured with ten cart loads per beegha and ploughed several times during the first fall of rain. The seed was sown in drills with the turphun or drill plough, 35 seers being sufficient to sow each beegha. The plants were fit for cutting in September and great care had to be taken while gathering that the leaves were not exposed to wet, as otherwise they became of little or no value. The dye was extracted sometimes from the green leaves and sometimes from the dry; if green the plants had to be conveyed away from the fields early in the morning and deposited in the vats prepared for the extraction of the dye. The vat was then filled with water and heavy weights placed across the top to keep the plants well down. During the night they fermented and in the morning the water was drawn off into a second vat where it was well worked up with large sticks until it was adjudged by experienced persons upon the watch to be of a sufficiently deep colour. In that state, the liquor was allowed to stand till the next day when the water was drawn off into a third vat and the sediment remaining was removed.

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54. This interesting account of the cultivation and manufacture of indigo has been taken from S.R.B.G. XI; P.95-96.

It was then tied up tightly in bags and suspended from the branches of trees to allow still more of the water to drain off, it was then laid to dry under a small shed. The refuse indigo dregs and also the plants made very good manure, an old indigo field was never ploughed up the succeeding season until the rains had fallen, as the roots and cut stalks if allowed to rot in the ground were very beneficial to it. Pure indigo was frequently adulterated with red earth which added to its weight but rendered it coarse and dull.(55)

Indigo, in the Kheda Jilla was cultivated quite extensively in Petlad, Dholka and Dascroi and also in the neighbouring territory of Cambay.

In 1828 the average produce of a beegha of indigo was about 28 seers of the prepared dye;(56) in 1840 it was stated to be only 6 seers valued at Rs.12, out of which the cost of cultivation was Rs.11 as follows :(57)

Value of seed	Rs. 1
Ploughing	Rs. 1
Weeding	Rs. 2
Hire of vats	Rs. 1
Hired labour	Rs. 1
Rent of Land	Rs. 5
	Rs. 11

55. James Forbes, op.cit, P.322
56. S.R.B.G; XI, P. 95.
57. R.D.V. 1840, No.5/1089; P.39.

The return was consequently Rs. 1 for the first year, in the seoond the profits could be Rs.3 per beegha from the old roots rending fourth new shoots thereby saving the expense of seed and ploughing.(58)

A glance at Table No. IV shows that one beegha of indigo plant yielded at an average 1½ to 10 seers. The price at which it was sold shows constant fluctuations. The fall in prices was generally occasioned from the inferior quality of indigo, for which consequently there was only a nominal demand.

Tobacco - By far the staple of the districts lying between Mahi and Sabarmati rivers was tobacco. In that tract of country called the Charotar extending easternly from Cambay to the Pargana of Thasra and including in main the parganas of Nadiad, Mahudha, Petlad and Matar, Tobacco was the most valuable product. Requiring little for home consumption most of it was available for sale and from its ready returns in some villages almost the whole revenue was paid.(59) There was no district under the Bombay Presidency where tobacco flourished to the extent it was in the Kheda Collectorate(60) and perhaps the finest tobacco in India was grown here.(61)

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58. Ibid; P.40.

59. R.D.V; 1828; No.89/245

60. Ibid.

61. R.D.V. 1840; No.5/1081; P.63.

Tobacco was introduced in Gujarat by the Portuguese(62) while in Petlad Pargana it seems to have been inducted from Khandesh only about the 2nd half of 18th century which showed that the cultivators were intelligent enough to adopt improvements when the change was clearly for their own advantage.

Tobacco was grown either with or without irrigation. The one was called 'peet' while the other 'Korat'. The 'peet' produced twice as much as the 'Korat' but it was very coarse in texture and only of about half the value of other, in the market. The village of Anand in the Petlad pargana in particular, was famous for the produce of tobacco and the following detailed account of its cultivation taken from the people upon the spott in 1826-27 may be considered valuable for its minuteness and accuracy.(63)

Tobacco was planted in the gooraroo Koowetur land which had to be ploughed eight to twelve times and one beegha required 20 to 30 cartloads of manure. The more manure was applied and the more the land was stirred by the plough the more plentiful would be the crop and the better the tobacco. In one beegha about eight to ten thousand plants were set. When the tobacco was cut a

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62. R.D.D. 1818; No.127; P.1553; W.H. Moreland, India at the Death of Akbar, 148. (London, 1920)

63. S.R.B.G. No.XI; P. 93-94.

few of the stalks (usually 20) were left standing and these sent out shoots which flowered and produced the seeds. The seed was sown after the first fall of rain in July on a small piece of ground well ploughed and manured to receive it and made up into small beds like garden ground; and if rain did not fall in due time it had to be watered. The young plants were ready to be transplanted into the fields in a month or so. When the land was quite pulverized and ready to receive the plants a large rake (joslee) having three or four wooden teeth at a distance of nearly 2 feet from each other was dragged over the field length ways and then cross-ways so as to divide it into squares and wherever these lines intersected each other there the plants were set. The planting took place within the last 15 days of August and the first 15 days of September. The young plants when set had to be watered two or three times and if the sun was powerful they had to be shaded until they took root. After the monsoon it required watering avery 10 to 12 days and little saltish water was prefered to the perfectly sweet water. The best and worst sorts of tobacco were not the produce of particular fields but depended on the labour, skill and care of the cultivator and in some degree on the quality of the water. When the tobacco was ripe it was classed into Kaleea and Jurdo. That which was thought good enough for Kalea was cut down stalk and

all and placed in the fields in rows to dry. It remained thus for 10 to 12 days and was then tied up in the early morning while moist with dew and carried home and made up there into bundles. It was an object to sell the tobacco as soon as possible as it lost weight when kept for a long period. The leaves of the plants that were looked upon as Jurdo were cut from the stalk and allowed to dry on the ground for 12 or 15 days and were then brought home little by little. The large leaves were then separated from the smaller ones and the whole was made up into bundles, having layers of large and small leaves alternately. The Kalea tobacco was the most refined portion and was used for hookas and made into snuff. The Jurdo was used for beeries, chillums and for chewing.

There were 4 district kinds of tobacco each of which was divided into the two above mentioned classes - Tulbudee, Khandeshee, Illanhee and the Gandees. The last two kinds were not in much favour with the growers.

Regarding the cost of cultivation one beegha of land laid out for tobacco cost Rs.10 per manure, Rs.5 for hired labour. A beegha yielded about 20 maunds priced at Rs.30 out of which the Government was paid from Rs.10 to Rs.15.

Among the cash crops, tobacco was the most popular and widespread one in the Kheda Collectorate. A glance at Table No.III.b shows a greater extent of area under Peeth

cultivation in comparison to that under Korat. The price of tobacco averaged from 8 annas to Rs.7. (Table No.IV) The constant fluctuations in the quantity and price of tobacco may be primarily ascribed to the following factors. The uncertain fall of rain either increased or diminished production. For instance, owing to the seasonable fall of rain in 1846-47(64) and in 1847-78(65) there was an increase in the cultivation of tobacco. Its reverse, viz the scantiness of rain caused a deficiency in tobacco cultivation. Blight or frost in the cold season was another source of misfortune, it reduced the quality of tobacco which consequently had to be sold at a lower price.(66) The fall of prices was also caused from fewer merchants from Malwa having come down for trade and those that did come were late in the season.(67)

Foreseeing the commercial significance of this valuable crop of tobacco, the British did not lag behind in making efforts to improve its cultivation. A step in this direction was made in 1843 with an experimentation in the cultivation of Syrean tobacco in the Borsad and Nappaad parganas of the Kheda Jilla. However the produce of the

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64. R.D.V. 1849; No.21; P.39.
65. Ibid. 1851; No. 21; P.47.
66. This happened in the year 1846-47. For ref. see R.D.V. 1849; No.21; P.36.
67. H.D.V. 1841; No.11/1240; P.47.

above was not very satisfying or superior to the tobacco already cultivated there.(68) In the same year the Agricultural and Horticultural society of Western India was given an annual grant of Rs.5000 as premium for encouraging improvements in the staple products of agriculture of the Bombay Presidency. Out of this amount Rs.300 was to be given for the best tobacco prepared for exportation and produced in the Kheda Jilla in quantity not less than 10 maunds.(69)

Opium - Perhaps in no other sphere (with reference to agriculture) was the British Government's interference so pronounced and self-motivated than pertaining to the cultivation of opium. Though not so extensively raised in Gujarat, opium had formed one of the valuable staples of the collectorate of Kheda.(70) An interesting account of the system of opium culture pursued in worthy of note.(71) The soil proper for the poppy flower from which the opium was extracted was goraroo and was prepared in November or December. It had to be manured to the extent of ten cart loads for beegha ploughed up several times and watered. The seed called Khuskhus was then sown broadcast in November or December, one seer being required to a beegha. The land had to be kept well weeded and watered every ten days until the flowers began

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68. R.D.V. 1843; No. 103/1545, P. 41-43.
69. Ibid., No. 4/1446, P. 59-60.
70. R.D.D. 1814, No. 94, P. 1685.
71. S.R.B.G., No. XI, P. 69.

to bloom sometime around in February. When the poppy was considered as sufficiently matured, the other skin of the capsule of the flower was lightly slit, care being taken not to injure the internal membranes. After the lapse of a day and a night the juice which had exuded was scraped off with a small knife and collected in small earthern pots which were afterwards emptied into larger vessels. After the extraction of the juice the flowers were allowed to run to seed which was collected about twenty days afterwards and formed a part of the cultivators regular profits. The cost of cultivation of a beegha of poppy flower and the return derived from it may be estimated as follows :

Manured 10 carts loads	Rs.	7.2.0
Ploughing four times		3.0.0
Seed		0.0.25
Weeding		1.0.0
Watering		16.0.0
Gathering the juice opium		8.0.0
Expenses of cultivation		35.2.25
Government rent		4.0.0
Total Expenses		39.2.25
Produce -		
Opium (7 seers)		35.0.0
Seed (4 maunds)		8.0.0
		43.0.0
Profit to the cultivator	Rs.	3.1.75

The above data shows that the cultivators of opium had part with a sizeable portion of their produce. However they

were still lift with a considerable profit for themselves. We lack information on the extent of opium grown in the Kheda Collectorate in the pre-British period. With the establishment of the British rule, the cultivation of opium received a severe set back in Kheda region. In the year 1803 the attention of its supreme government was sincerely attracted by the Report of the Reporter General on external commerce at Bombay relative to the quantity of opium imported into Bombay for re-exportation from Surat and the northern parts of Gujarat in 1800-01, 1801-02 and 1802-03. It was stated thus that the average amount of the importation of three years was 1233 maunds and an increase or continuance of the trade in opium in the Western side of India was detrimental to the revenue derived from the monopoly of opium in Bengal.(72) Hence, the Governor-in-Council directed the adoption of immediate measures for the prevention of the further growth of that commerce and for its ultimate annihilation.

With this view in 1803 the supreme Government ordered that the cultivation of poppy was to be immediately prohibited within the company's territories.(73) It also endeavoured to discourage the importation of opium into Bombay from Gujarat, Malwa and Gaekwad's territories,(74)

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72. R.D.D. 1814; No.94; P.1685.
73. Ibid.
74. Walter Hamilton, The East India Gazatteer containing particular descriptions of the empire's, kingdoms, Municipalities. Vol.I, (London, 1828) P.606.

ships and vessels of every description, navigating under the British flag were to be restricted from receiving any opium on board (with the exception of opium exported from Bengal) either in the ports subject to the jurisdiction of Great Britain or in the ports of any foreign power, native or European.(75)

From the result of information collected, it appeared that the plant had not been much cultivated in Gujarat for the purpose of being manufactured into opium but that Malwa had been the country whence Gujarat was supplied with opium the chief ports of exportation being Cambay, Jambusar, Broach and Surat.(76) Though rigid orders were issued, the transportation of opium did not stop entirely. The routes by which the drug had been usually brought into Gujarat from Ratlam were by road direct to Baroda, by Godia into the eastern district of the Kheda collectorship and by Kapadvanj to Ahmedabad and other adjacent parts.(77) For the purposes of exportation it was brought by Baroda to Jambusar and from there to the Portuguese ports for the China Market.(78) As the route of the opium transportation covered territories occupied by the Gaekwad and the

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75. R.D.D. 1814; No.94; P.1686.

76. Ibid.

77. R.D.D. 1817; No. 123; P.5234.

78. Ibid.

Nawab of Cambay, their help was sought in order to put a stop to the opium trade on this side of India. The Gaekwad willingly cooperated and issued orders to the Kamavisdars of his Mahals that from any person wishing to export opium for sale a duty of ₨.12 on every Surat seer was to be levied and the purchaser's name together with that of the place where the opium was to be conveyed to was to be written for the information of the Gaekwad Government.(79) A similar sort of cooperation was sought from the Nawab of Cambay as well. Inspite of the best intentions of the British Government and the increased duty imposed on opium, the trade in this article could not be stopped. The details of the opium trade and the new routes by which it began to be conducted will be dealt with Chapter VIII. It is suffice to mention here that the increased duty was evaded and smuggling of opium through outstations continued. It was realised that opium was extensively used by a large class of people and the miserable effects of the want of it to those accustomed to the stimulant was a fertile cause for petty thefts and greater smuggling to supply the means of bringing the drug.(80)

In their other object of preventing the cultivation of opium in Gujarat the British achieved for greater

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79. R.D.D. 1818; No.129; P.2354

80. R.D.V. 1846; No.8; P.70.

success. Up to the end of 1833-34 the practice of purchasing the opium grown in the Kheda Jilla from the cultivators was to allow them to take the juice to their own homes and after they had manufactured it into cakes, they were required to surrender it to the government authority at the village and receive whatever may have been the fixed price per seer for the season.(81) In that year it was ordered that at the season when the poppy pods were in a state to yield the juice, the cultivator was to be accompanied by a government Ravnia or village Havaldar to the fields who was to be present while the juice was extracted which was immediately taken to the village chowra, weighed and deposited in separate earthern pots with the cultivator's name ticketed thereon. The quantity of juice extracted was daily accumulated in earthern pots and when the whole of the juice for the village had been collected it was taken to the Kamavisdar's Kutcherry who paid the different cultivators according to the weight of their respective quotas at the government rate that had been fixed for the year. Following this practice, the opium was found to be more pure and of superior quality to that which had been made into cakes by the cultivators themselves. The cakes, thereafter, were sold to the licensed vendors for retail sale at the prices fixed for each year.

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81. R.D.V. 1839; No.77/1040; P.199

The restrictions imposed by the government on the cultivation of opium were considered irksome by the cultivators. They opined that their interests had been greatly injured by the interdiction as the cultivation of opium had always amply repaid their labour and often enabled them to discharge a large portion of their revenue thereby leaving them a large portion of their grain produce for family consumption.(82)

The earliest figures that we have, showing the area under cultivation of opium are of the year 1826-27. (Table No. III.a)(83) Thereafter in 1836-37 and 1837-38 (Table No. III.b) there was an increase in the extent of opium cultivation which shows that a suitable profits did accrue to the producer.(84) Thereafter there appears to have been a complete cessation of popply cultivation from 1840-41 to 1843-44 as per the governments prohibitory orders of 1839 in which the government declined to receive the produce of opium as revenue. The lands formerly occupied by the cultivation of opium were then appropriated to the growth of jeera and sugarcane. In the year 1844-45 the cultivation of the poppy plant was revived. The main

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82. R.D.V. 1846; No.14; P.51.

83. S.R.B.G., No.XI; This gives the extent of opium cultivation in the Kheda Jilla as 100 beeghas.

84. R.D.V. 1831; No.12/770; P.219-220; Ibid. 1839, No. 10/973; P.22.

causes for its revival appear to have been the facility to smuggle opium, (85) fewer and inefficient restrictions, (86) and the profit arising from the sale of the Khus Khus or the poppy seeds. (87)

As has been mentioned earlier, under the British government the opium required for consumption in the Kheda Jilla was issued to the licensed vendors for retail sale from the government depot. The consumption of opium here in 1826-27 was 310 maunds, thereafter the sales began to decline gradually. (88) The sale for 1830-31 was maunds 267, 1831-32 maunds 168, and in 1832-33 only maunds 110, one third of what had been six years ago. (89) It is significant to note that so sudden a decline in the demand of the government opium was not due to diminished consumption. But because of being smuggling carried on, We have the collector of the Kheda Jilla complaining in 1833 and again in 1841 that his government was in the possession of a supply of opium for several years' consumption; by retaining such a deposit, the government itself was the loser as the opium lost weight when stored.

The rates at which the juice was purchased by the

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85. R.D.V. 1849; No.20; P.69.
86. Ibid; 1852; No.16; P.61.
87. Ibid, 1851; No.21; P.49.
88. R.D.V. 1833; No.15/483; P.280.
89. Ibid.

government averaged around Rs.3 per seer (Table No.IV) and it was sold to the licenced vendors for around Rs.7 per seer. This was slightly higher than the average Gujarati opium priced at Rs.6 while that from Malwa ranged from Rs.4 to Rs.9.(90)

Cotton - The collectorate of Kheda does not appear to have been recognised as a good cotton district. Cotton was grown only in small quantities throughout the collectorate and that too, of a variety termed the Tulubda.(91) This Tulubda of Gujarati cotton yielded two alternate crops annually, the first in January and the second between March and April. It continued in the ground without removal for at least 3 years but did not yield a crop until the second year.(92) It was said to be inferior in quality to the Kanum cotton of Broach and yielded a smaller return - 4 maunds Kuppas of former gave a maund of clean cotton, whereas three of the latter could yield and equal return.(93) Again clean cotton obtained from the Kanum seed was valued at Rs.5 while that from the Tulubda Rs.4 per maund.

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90. R.D.V. 1830, No. 12/293, P. 117.

91. R.D.V. 1843, No. 34/1476, P. 185. This variety was prefered as it required little attention.

92. Ibid., P. 186.

93. R.D.V. 1840, No. 13/1097, P. 133.

Unlike Broach, cotton in the Kheda collectorship was never sown alone being always inter mixed with grains, bajree, bowta and Kodra. The intermixture of rice and cotton plants in one field delighted James Forbes who stated this to be one of the most beautiful objects in the agriculture of Hindustan.(94) The sowing of Indian corn was even recommended at the Isles of France and Bourbon (from which place the Bourbon cotton seed was experimented in Gujarat) as affording protection to the tender plants from the heat of the sun until the grain be ripe, by which time they had acquired sufficient vigor.(95) Cotton appears to have taken up only one sixth of the space per beegha for instance, in one beegha 22 furrows were occupied with cotton and 110 furrows with the above grains.(96)

The cotton produced in this Jilla was entirely limited to the demand in Gujarat and was manufactured into Dungaree, Dhotee and other coarse clothes worn by the natives.

Picking of cotton was a process which engaged men, women and children and it was during this time that much of the dirt got intermixed with the cotton.(97) This was

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95. R.D.D. 1818; No.127; P.1558.

96. R.D.V. 1843; No. 34/1476; P.185.

97. Alexander Mackay, Op.Cit. PP. 44-49.

partly owing to carelessness or to design and also due to circumstances which to some extent were difficult to control. For, at the commencement of the picking season Gujarat suffered from a deficiency of labour. This was because wheat, bajra and other grains ripened about the same time as the cotton and the first care of the people was to secure the grains.

Because of the delay caused in picking the cotton, much of it fell from the pod either on the ground or stuck to the leaves. At the storing place the kuppas was again exposed to various frauds. In many cases, the pits in which it was stored at the village Khullee, were left open and the kuppas was thus exposed to the flying dust and moisture.

Self interest (as in the case of opium) prompted the British to take a keen interest in the cultivation of cotton. The British cotton manufactures in England especially of the finer sort were indebted to American for the raw material. As a substitute for the American the Indian cotton was tried and was found quite suitable. The staple of Gujarat appears to have been prefered to that of Bengal. These advantages enlightened the English to try out various experiments in cotton culture, even in a region like that of the Kheda Collectorship, which had never been recognised as a good cotton district.

Cotton from three different places was experimented in the Kheda district. The first experiment was made with the Bourbon cotton in the 1815s. In the initial stages the experiment proved quite favourable and the government even agreed to entrust the cultivation of this valuable shrub for a limited extent to the Talati and also to grant premiums to them as a stimulus.(98) However, the experiment in Bourbon cotton was a failure. We have a report of 1839 stating that out of 7 beeghas cultivated with the Bourbon seed in 1839-40 only 2½ beeghas were in a healthy state while in the rest there was no cultivation.(99)

The Broach variety of cotton viz. the Kanum which was decidely superior to that of the Tulubda variety was also experimented in the Kheda Jilla. After trying for a few years, it was ultimately given up in 1842-43.it perhaps uncongenial soil coupled with inattention resulted in a scanty produce.(100)

Experimentation with American cotton seed was also made in the Kheda Jilla in the 1840s. However like the Broach cotton, the climate and soil of this Jilla was not found suitable for the American Cotton.(101) From the

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98. R.D.D. 1818; No.130; P.2987.
99. R.D.V. 1841; No.11/1240; P.53.
100. R.D.V. 1842; No.9/1342; P.116.
101. For details of these experiments see R.D.V. 1842; No.34/1367; P.21-22; R.D.V. 1844; No. 120/1677; P.41.

failure of above experiments it appeared that cotton of good quality could never be produced in this Jilla and the variety already grown here was the most preferable one with reference to the soil and climatic conditions.

Cotton in the Kheda Jilla, as has been mentioned earlier, was never sown alone but always intermixed with grains. Therefore it is difficult to state precisely the beegas under cultivation of cotton alone, except for the year 1826-27, (See Table No.III.a).

Table No. III.b, shows a step decline in the area under cultivation of cotton untermixed with grains from the year 1847-48. This was caused by a portion of the lands cultivated with this crop during the proceeding year having been appropriated to the growth of other articles.

The produce of cotton varied from four to 8 maunds per beegha. The price of kuppas averaged around Rs.1.0.0 while that of cleaned cotton around Rs.4 per maund. (Table No. IV)

On the whole cotton in the Kheda Jilla was quite inferior to that of Broach, its staple was short and the plant produced but scantily, it was used in the common manufactures of the country and was not considered as a

worthy article for purposes of export to foreign countries.(102)

Sugarcane :- Sugarcane, in the Kheda Jilla was only cultivated for internal consumption. Though it yielded quite a profitable return to the cultivator it was by no means extensively cultivated. It was sown in the month of May and the cane was ripe in January. The expense of cultivating one beegha of sugarcane was on an average Rs.110, produce on an average was 52 maunds of goor or molasses which varied in price but generally produced Rs.3½ per maund making the total of the produce Rs.182 government dues may be reckoned at Rs.20 per beegha thus leaving a not profit of Rs.52 per beegha to the cultivator.(103)

If we look at (Table No. III.b) we find constant constant fluctuations in the extent of area under cultivation of sugarcane. The decrease in its area was often caused by scarcity of rain with the result that the canes were inferior and the produce less.(104) The produce (molasses) averaged from 20 to 100 maunds per beegha. The price of molasses ranged from Rs.2 to Rs.4 per maund. The price largely was determined by the quantity of imports and exports. If there were excessive imports, for instance

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102. R.D.V. 1840; No.13/1097; P.108.

103. R.D.D. 1820; No. 157; P.4039

104. R.D.V. 1840; No.13/1097; P.135.

in the year 1843-44 the price of molasses fell.(105) On the other hand if there were less imports of this article the price rose.(106)

Experimentation in the culture of sugarcane was tried in this Jilla in the 1830s and 1840s. The seed canes of the Mauritius sugar cane were obtained from Surat and Jambusar and planted here in 1832-33. The experimentation was tried for about 10 years and ultimately it was given up in 1841-42 after being pronounced a failure due to defects in the soil and water of the Kheda Jilla.(107)

The produce of sugarcane was seldom manufactured into sugar. It was only processed into molasses or jaggery which was sold in the markets. The inhabitants either purchased 'foreign' sugar or were content with Jagree.(108) Though lithographed instructions for the manufacture of sugar were widely circulated among the ryots of the Kheda Jilla, the results were not at all encouraging. In the year 1840, we find the collector of the Kheda Jilla complaining that only one person had uptil now attempted the manufacture of sugar and that too on a very small scale.(109)

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105. R.D.V. 1846; No.14, P.49.
106. R.D.V. 1842; No.9/1342, P.115.
107. R.D.V. 1840; No.13/1097; P.135.
108. James Forbes Opt. Vol.II; P.38.
109. R.D.V. 1840; No.5/1089; P.60.

Jeera - The cultivation of jeera or cumium seed was introduced into the Kheda Jilla in 1840-41, in lieu of the poppy plant.(110) No wonder when opium cultivation was revived in 1844-45 the area under extent of jeera cultivation began to suffer (Table No.III.b). However in that particular year there was an increase in the jeera cultivation the reason for which is stated to be the greatly diminished cultivation of tobacco.(111) The average produce per beegha varied from 2 to 10 maunds while the price ranged from Rs.2 to Rs.4. (Table No.IV)

Silk - The British also endeavoured to encourage the culture of silk in the Kheda Jilla. They found that this Jilla possessed quite a few advantages for the rearing of the silkworm.(112) That its soil and climate were well adapted to the growth of the Mulberry tree was proved by the existence of several trees of the black and white varieties in gardens of many years standing and in high vegetation. Moreover the temperature of the climate did not differ in a material degree from that of the Deccan where the silk worm had been found to thrive. Another great inducement was the existence of a large number of

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110. R.D.V. 1842; No. 9/1342; P.167.

111. R.D.V. 1846; No.15; P.37.

112. R.D.V. 1840; No.121/1205; P.133.

barracks which were considered useful for preserving and rearing the silkworm as well as for winding and storing the silk.

Inspite of the best intentions of the government the culture of silk failed to take roots in this Jilla. The Mulberry plants which had been distributed to the cultivatoss died as the parties supplied with them had neglected to take care of them.(113) The inhabitants, it appeared had no desire to cultivate the tree and thus consequently took no interest in the production of the silk chiefly owing to the aversion they had against the destruction of the worms in the cacoons.(114) Ultimately in 1847 the government ordered the abolition of the experimental silk farm at Kheda as it had not proved advantages to the government and not done much to encourage silk culture among the cultivators.(115)

Kussomb - Kussomb or safflower was grown in nearly all the parganas of the Kheda Jilla, the Petlad pargana having the largest extent of area under cultivation of this article. On an average the Jilla produced about 3000 maunds of dry safflower which was exported to Kathiawad, Ahmedabad,

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113. R.D.V. 1844; No.120/1677; P.36.
114. Ibid.
115. R.D.V. 1847; No.180; P.97.

Surat, Bombay and other places as well as extensively used in the Jilla itself for dyeing clothes of a red colour.(116) One beegha of safflower on good land yielded 7 maunds of Kussomb flower priced at Rs.2½ per maund, this when dried gave 1¾ maund and on an average was sold at Rs.16 per maund.(117) The seed called Kabree was valuable to the ryots as food for their cattle and averaged 10½ maunds per beegha which was given to the growers as compensation for their labour in gathering the flowers. Oil of a bad kind was also extracted from the seed and was used to adulterate ghee and other oils of a better quality. The flower contractors held a complete monopoly and met, when the crop was ripe to fix the price at which the whole of the Kussomb flower was to be sold.(118) Thus it was the quantity that mattered and superiority in quality afforded no advantage to the grower.

From the above it is clear that though tobacco, cotton and other cash crops enabled the cultivators to pay a sizeable part of the revenues, it were grains that brought the maximum profits to them. For instance, in the case of bajree as has been mentioned earlier, the cultivators derived a net profit of Rs.11 per beegha, which was quite substantial in the given economy of the Indian sub-continent. Exception to the case was sugarcane, from

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116. R.D.V. 1841; No.11/1240; P.57.
117. R.D.V. 1826; No.3/135.
118. R.D.V. 1841; No.11/1240; P.57.

the cultivation of which the cultivators were amply profited.

Other agricultural products of the Jilla included ginger, turmeric, chillies, yarns, sweet potatoes and various vegetables and vegetable oils. The vegetables were all sown in the latter part of the rains and gathered in the cold season.(119) Vegetable oils formed an integral part of the agricultural production of this Jilla. In the main, mention may be made of mustard seed, erundy and castoroil. The oil extracted from the different seeds was used for various purposes - for lighting lamps (as the natives never burnt candles and in the inland districts coconut did not thrive) for the body, for religious ceremonies and for culinary purposes.(120) The usual mode of extracting the oil from the different seeds was to put them into a cylindrical trough or large mortar, a bullock driven round the simple machine kept the pestle in action until the oil was extracted after which the reminder formed a nutritious food for the cattle.(121) Amongst fruits, mangoes appear to have been quite popular.

Land Reclamation : The exact area of arable waste under the Marathas or the early away of the British is not known. The survey reports give us the extent of the arable waste for the year 1826 of the different parganas of the Kheda

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119. R.D.D. 1820; No.153; P.1860.
120. James Forbes Op.at Vol. II; P.36.
121. Ibid. P.37.

Jilla. (See Table III.a) In order to augment their revenue resources, the British turned their attention towards the reclamation of waste lands, right from the start of their rule in Gujarat. Several plans were proposed for promoting the above object and it was realised that one rate could not be applied universally as the different circumstances of the lands had to be considered - the same indulgence or encouragement was not necessary for arable land recently in a state of cultivation as would be required for lands that had been lying waste for a long time.(122)

With regard to the appropriation of the waste lands, the custom in the Kheda Jilla appears to have been that the government would receive ¼ of the produce from waste land in the first year, in the second year, half of the produce and afterwards it was considered in the same light as other land - it was also the custom for the government to lend the ryots, money, for defraying the expense of building wells.(123)

Keeping all this in mind, the British resorted to the leasing system as their Modus operandi for bringing waste land under cultivation. In the year 1804 agreements were affected with the Desais and Amins of three parganas of the Kheda Jilla viz. Nadiad, Matar and Mahundha, to achieve their

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122. R.D.D. 1805; No. 56; P. 1175.
123. Ibid.

target. Briefly speaking, the terms of these agreements were moderate, and varied according to the number of years the lands had been lying waste.(124)

That the above measures were quite successful is evident from the statement given by the collector of Kheda in 1808, contending that 3500 beeghas of waste land in Nadiad had been brought under cultivation, 300 beeghas in Matar and 4000 beeghas in Mahudha also.(125)

Besides the above, another mode of reclaiming waste land was to establish a new village and to rent it out for cultivation. Sometimes, it so happened that lands on the boundaries of the villages were left waste or converted into meadow lands. They being at a distance from the cultivators' homes, were neglected. One such description (of 3000 beeghas) of land was existing in Nadiad district, for which proposals were made by the then collector of Kheda for establishing a new village site in 1818.(126)

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124. R.D.D. 1808; No.45; P.978-998.

125. R.D.D. 1808; No.60; P.518.

126. R.D.D. 1818; No.128; P.2047. A similar practise existed under the Mughals too. For, their relevant records state not only a ststistical statement of lands of every description in the different parts of Gujarat, but also specify a certain number of beeghas separated from the original extent of different villages for the purpose of establishing a new village. For ref. See R.D.D.1819 No.145; P.3667.

Some of the proposals were that the person who had agreed to establish a new village (Dwarkadas Shankardas) was to be appointed the Patel and allowed a passaita of 60 beeghas.

The rent was to be levied on the lands to be cultivated at the following rates :

-In the first year lands were to be rent free.

-In the second year lands were to pay $\frac{5}{4}$ per beegha.

-In the third year lands were to pay ₨.2.

--In the fourth year lands were to pay ₨.3.

-In the fifth year lands were to be surveyed, and assessed at the full rates :

The lands being of an excellent quality it was expected that after a period of 10 years, the lands would yield at least ₨.15000.

Similar type of proposals, though less favourable (considering the inferiority of the soil, the turbulence of the neighbourhood and the smaller rates of begotee even in established villages) were sanctioned to two Desais of Nadiad viz. Veerchand Laldas and Jamedar Chittor Singh for establishing three villages within the bounds of certain villages in the district of Alina, each new establishment was to have 5000 beeghas of land attached to it.(127)

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127. R.D.D. 1819; No.145; P.3687.

From the above, it is evident that efforts were made by the British to bring as much waste lands as possible under cultivation. But inspite of this all waste lands could not be reclaimed and in 1850, we have Alexander Mackay stating that about 30 percent of the land was lying waste in the districts of Kheda and Broach while in those of Ahmedabad and Surat the proportion was still greater.(128)

Another mode of encouraging cultivation was to grant tagavi loans to the cultivators. It may be mentioned here that Tagavi was of two kinds and served two purposes - One consisted of the sum (of revenue) which was allowed to remains uncovered until August; this was for the Abadee or prosperity of the country in cultivation - The second consisted of a loan issued from the government's treasury and was applied for the promotion of the cultivation of waste lands.(129) It was lent on security and was to be repaid within two or three years.

Besides the government, some of the wealthy individuals also lent money to the cultivators in the form of mortgage bonds which had to be registered as means of security. We do not have much detailed information regarding the amount of loans lent by the wealthy persons. However, we are acquainted, to some extent, with the Tagavi advanced by the

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128. Alexander Mackay, Op.Cit P.136, 145.

129. R.D.D. 1805; No.46; P.1173.

government to the ryots of the Kheda Collectorate.

From the years 1837 to 1842 the Tagavi advanced was as follows :(130)

1837	Rs. 17,000
1838	Rs. 10,310
1839	Rs. 4,805
1840	Rs. 1,430
1841-42	Rs. 823
1842-43	Rs. 322

Thus the Tagavi sums show an appreciable decline. This may have been due to the fact that the cultivators by this time had become quite prosperous or perhaps there was a decrease in the arable waste lands.

We have hardly any information regarding the types of manure used by the cultivators. That they did manure their fields is certain. British Heber was wrongly informed when he states that no manure was used.(131) The cultivators of Gujarat obviated the evil consequences of not allowing their lands to lie fallow (for recovering their fertility) by the great attention they paid to manuring those lands which were in any way impoverished by the articles cultivated in them.(132) This was done

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130. R.D.V. 1837; No. 90/848; R.D.V. 1838; No.94/954; R.D.V. 1839; No.197/1070; R.D.V. 1839; No.135/1219; R.D.V. 1841; No.96/1325; R.D.V. 1842; No.101/1434.

131. British Heber, Op.cit Vol. II P.325

132. R.D.D. 1820; No.157; P.4042.

especially in the case of sugarcane and tobacco which required particular nourishment every year, while in the case of grains they manured the lands at stated periods varying in proportion to the nourishment each required.(133)

The manure in general use was comprised of the dung and litter of cattle and mud from the bottoms of dry tanks.(134) Manure does not appear to have been in general use in the Broach Collectorship while in that of Kheda, it was used as extensively as possible; in Ahmedabad manure was preserved with great care and sometimes sold at a high price.(135)

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133. Ibid.

134. R.D.D. 1820; No.153; P.1891.

135. Ibid.

Chapter - I / Table No. I*

Statement showing the agricultural stock and resources of the Kheda Jilla in 1926/27

Name of parganas	Sq. miles	Villages	Houses	Souls	Horned cattle	Horses and camels	Sheep and goat	Ploughs	Carts	Net Rev. the mean of 6 years Rs. q. r.
Nadiad	162.46	36	16587	64658	30822	209	4139	5592½	3115	275858.2.5
Mehemdabad	33.56	11	2094	8657	3612	41	160	687½	216	33336.3.4
Oomret Tappa	11.46	5	3428	13231	3177	66	439	439	471	25573.3.5
Bhalej Tappa	16.43	11	1100	4251	3224	22	400	400	321	3766.2.59
Petlad	206.87	77	18365	72074	38739	179	6992	6162½	3422	416544
Napad Tappa	28.95	13	3144	12443	6285	16	845	1059½	656	50794.2.5
Mahundha	156.65	-	12216	46968	31504	233	5139	5196	2393	-
Dascroi	94.59	33	5849	20514	16580	67	1658	2572½	822	84861
Dholka	63.39	16	4001	13661	8411	76	4600	1870	548	64605
TOTAL		202	66794	256457	142354	909	24372	23979½	11873	-

*Selections from the Records of the Bombay Government No. XI.

Chapter - II / Table No. 2*

Statement showing the land under irrigation in 1826/27 A.D.

Name of Pargana	Extent of land under irrigation	No. of Wells in use			No. of wells in a ruinous condition	Total No. of Wells
		Owned by Private individuals	Owned by Government	Total		
1. Mehemdabad	-	81	50	131	113	244
2. Nadiad	7%	187	247	434	148	582
3. Petlad	11%	-	-	1032	221	1253
4. Mahundha	7½%	287	165	482	347	829
5. Dholka	22%	143	112	255	69	324
6. Dascroi	25%	-	-	761	359	1120
7. Napaad Tappa	-	-	-	122	44	166
			TOTAL	3217	1301	4518

* S.R.B.G. XI.

Chapter - I / Table No. 3(a)*

Yearwise quantity of produce from 1839/40 to 1849/50
in Beeghas

Name of Produce	1839/40	1840/41	1841/42	1842/43	1843/44	1844/45	1845/46	1846/47	1847/48	1848/49	1849/50
1. Tobacco-Dry	18509	3936	3979	4106	6094	6166	2621	4083	5246	4350	3070
Wet		10256	11105	12516	17971	15583	10935	11906	11634	12594	11521
2. Poppy	3¾	-	-	-	-	1982	416	56	285	50	470
3. Indigo	6856	1409	1899	1737	1041	1077	958	1124	832	843	1143
4. Surgarcane	1207	1501	2198	2715	3944	3055	1330	747			
5. Cotton (mixed with grains)	23772	4018	20163	21757	18417	18220	9688	10901	6964	5668	5794
6. Kussomb	4342	3515	-	-	-	-	-	-	-	-	-
7. Jeera	-	3456	3619	3684	3506	5868	3929	2010	2596	2417	1443
8. Grains	(figures not available)					410447	397020 .13.18	422756 .14.5	415651. 9.9.	397709 .0.2	423906
9. From alienated lands	(Figures not available)										
10. Total cultivated land						443380	426897 .13.18	453583 .14.5	445337 .9.9	426098 .0.2	449571

* R.D.V. 1843, No. 10/1452; Ibid. 1844, No. 10/1567; Ibid. 1846, No.14, Ibid. 1846, No.15; Ibid. 1849, No. 20; Ibid. 1849, No.21; Ibid. 1851, No. 21.

Chapter - I / Table No. 3(b)*

Parganawise distribution of the different crops for the year 1826/27.

Name of Crops	Mehemdabad B. W. Ww.	Nadiad B. W. Ww.	Oomret and Bhalej Tappa B. W. Ww.	Petlad B. W. Ww.	Napaad Tappa B. W. Ww.	Mahundha B. W. Ww.
1. Bajree and Jowar with Kuthol	15015.11.0	107587.16.6	6583.19.13	107604.1.14	15481.9.6	75785.5.3
2. Kodra and other dry grains	3027.6.10	15561.8.18	1130.8.14	42347,15.12	7184.16.9	22866.3.16
3. Rice and Sathee	712.14.11	5296.19.11	1015.19.3	9271.19.5	1551.13.2	7290.9.16
4. Wheat and barley irrigated on land	205.2.19	491.2.14	-	410.19.9	30.6.16	1584.12.19
5. Indigo	-	-	-	2742.16.6	69.3.6	14.9.15
6. Tobacco	211.18.0	2494.15.4	27.34	6477.14.17	796.9.11	1860.0.2
7. Kussomb	36.3.17	34.16.2	-	104.5.0	-	42.6.12
8. Opium	-	16.12.17	-	36.3.4	6.15.8	28.6.14
9. Cotton	16.16.7	21.17.18	1.3.5	8.1.6	0.19.15	-

1844-45		1845-46		1846-47		1847-48		1848-49		1849-50	
Produce	Price	Produce	Price	Produce	Price	Produce	Price	Produce	Price	Produce	Price
3 to 25	8 annas to Rs.3	3 to 20 4 to 40	8 annas to Rs.3	5 to 20 10 to 40	- -	5 to 20 10 to 40	-	5 to 20	Rs.1 to Rs.6	1 to 10 5 to 20	Rs.1 to Rs.7
4 to 8 seers	Rs.15 to Rs.35	6 to 15 seers	Rs.40 to Rs.80	6 to 15 seers	Rs.40 to Rs.80	3 to 10 seers	Rs.25 to Rs.40	1½ to 6 seers	Rs.48 to Rs.84	1½ to 6 seers	Rs.70 to Rs.100
10 to 100 maunds	Rs.1.8.0 to Rs.2.8.0	12 to 70	Rs.1.12.0 to Rs.3	15 to 80	Rs.2 to Rs.4	25 to 80	Rs.2 to Rs.3	10 to 50	Rs.2.8.0. to Rs.5.8.0	10 to 40	Rs.4.8.0 to Rs.5.8.0
1 to 10 maunds	Rs. 1 to Rs.1.8.0	1 to 10 maunds	12 annas to Rs.1.8.0	1½ to 11	12 annas to Rs.1.12.0	1½ to 11	Rs.0.14.0 to Rs.1.12.0	-	Rs.0.12.0 to Rs.1.8.0	1 to 5 maunds	12 annas to Rs.1.8.
-	-	-	Rs.4	-	Rs.4.8.0	-	Rs.4.8.0	-	Rs.4.4.0	-	Rs.5
-	-	-	-	-	-	-	-	-	-	-	-
1 to 11 maund	Rs.2.8.0 to Rs.5	1 to 10 maunds	Rs. 1 to Rs.4.8.0	1 to 10	Rs.1 to Rs.4	-	Rs.2 to Rs.4	½ to 10	Rs.9	½ to 4	Rs. 4 to Rs. 9
-	-	-	-	-	-	-	-	½ to 5 seers	-	-	-

* R.D.V. 1843, No.10/1452; Ibid., 1844, No.10/1567; Ibid. 1846, No. 14; Ibid., 1846, No. 15; Ibid., 1849, No.20; Ibid., 1849, No.21; Ibid., 1851, No.21.

Chapter - I / Table No. 4*

Produce per beegha in maunds and Price of different crops
1938-39 to 1949-50

Name of Produce	1938-39		1939-40		1841-42		1842-43		1843-44	
	Produce	Price	Produce	Price	Produce	Price	Produce	Price	Produce	Price
Tobacco	-	Rs.2 to Rs.3	-	12 annas to Rs. 2.4.0	10 to 40	12 annas to Rs.3	More or less same-		5 to 10 10 to 40	8 annas to Rs.3
Indigo	-	Rs.30-80	-	Rs.30-65	6 to 9 seers	Rs.27 to Rs.50	5 to 10 seers	Rs.20 to Rs.40	4 to 8 seers	Rs. 18 to Rs. 40
Sugarcane (Molasses)	25	Rs.2 to Rs.3	50	Rs.2.4.0 to Rs.3	-	Rs. 2 to Rs.4.2.0	25 to 100	Rs.2 to Rs.3½	20 to 100 maunds	Rs.1.3.0 to Rs.2.8.0
Cotton (Kuppas)	-	-	7	Rs.1.8.0	2 to 8 maunds	Rs.4	3 to 9 maunds	Rs.1 to Rs.1.8.0	1 to 10 maunds	Rs.1 to Rs.1.8.0
(Napaad)	-	-	-	-	-	-	-	Rs.4	-	-
Kussombee (Dried-flowers)	-	-	1½	Rs.12	-	-	-	-	-	-
Jeera	-	-	-	-	2 to 10 maunda	Rs.2.8.0 to Rs.4	2 to 10 maunds	Rs.2 to Rs.4	2 to 10 maunds	Rs.2 to Rs.4½
Poppy	-	-	-	-	-	-	-	-	-	-