A STUDY
OF
RURAL ECONOMY OF GUJARAT
CONTAINING
Possibilities of Reconstruction

BY
J. M. MEHTA,
M. A. (Oxon.), Ph. D. (Econ. Lond.)
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INTRODUCTION.

I propose to give in this thesis some idea of the economic conditions of rural Gujarat. The subject of rural economics in India has been largely neglected. Some work was done by Dr. Slater [1] in South India, Dr. Mann [2] and Mr. Keatinge [3] in the Deccan, Mr. Jack [4] in Bengal, and Mr. Calvert [5] and Mr. Darling [6] in the Punjab, but on the whole the study of economic conditions of rural India has received very little attention from Indian writers. The Royal Commission on Indian agriculture gave a strong impetus to the study of economic conditions in India, but there remains a wide scope for the careful study of rural problems of India.

The object of this thesis is not merely to describe the actual conditions of rural Gujarat, but, if possible, to suggest some measures which would improve the existing conditions and lead to increased production and greater material prosperity. The poverty of the Indian ryot has become almost proverbial. Mere talk, however, does not help him, and if any improvement is to be brought about in his economic conditions, it can only be by concerted action on the part of the peasants themselves, the community as a whole and the State. To think that the State by loosening the strings of its purse will solve the problem of the poverty of the Indian ryot is absurd. The only solution of the problem of rural

1 Slater's "South Indian Villages."
2 Mann's "Life and Labour in a Deccan Village."
3 Keatinge's "Rural Economy of the Bombay. Deccan" and "Agricultural Progress in western India."
4 "Economic Life of a Bengal District."
5 "Wealth and welfare of the Punjab."
6 Darling's "The Punjab Peasant in Prosperity and Debt."

poverty in India is a determined effort on the part of the people and the State to improve the economic conditions of Indian peasant and bring about a radical change in the rural economy of India.

It was at Dr. Slater's suggestion that I visited Italy, where I spent about two months. There is a remarkable similarity between some of the economic problems of Italy and India. The problem confronting Italy to-day is a steadily increasing population pressing hard on its limited resources. Italy has to import large quantities of wheat from foreign countries. The problem before the country is increased production which would obviate the necessity of importing foreign wheat.

Emigration, which is one method of relieving the pressure of population in Italy, is getting more and more difficult. Mussolini's policy is to discourage emigration and to concentrate all efforts on increased production with a view to feed the growing population of Italy with food produced at home. As the minister of National economy said recently the demographic, physical and economic conditions of Italy require that the average yield should increase up to the point of making the importation of foreign wheat impossible." [1]

The Fascist policy has been, therefore, to encourage agriculture, which had been neglected in the past. The Italian state has closely identified itself with agricultural interests and there has been a series of legislative acts to support agriculture, the most notable one being the " Battaglia del Grano " or the wheat campaign, containing a series of provisions designed to intensify the cultivation of wheat. The popular slogan in Italy to-day is intensification of agriculture. The problem before India is, in many respects, the same. What is required in India is increased agricultural production and that can be obtained only by intensifying the agriculture. Both in India and Italy agricultural production suffers from

1 International Review of Agricultural Economics, 1926 (Jan.-Mar.) pp. 72 et seq., Published by International Institute of Agriculture, Rome.

want of technical knowledge and inadequate investment of capital. The problem before both the countries is essentially one of knowledge and capital. What is required is a reform in the institutions of agricultural research and agricultural instruction and the creation of facilities for getting capital at a cheaper rate to be used for productive purposes only.

The question of agricultural research has been carefully examined by the Royal Commission on Indian agriculture. I have therefore thought it unnecessary to examine that question here. I have confined myself to the investigation of economic conditions of rural Gujarat and I have tried to find out if the rural conditions in Italy and the experiments made in that country to-day can indicate some measures which might lead to the improvement of the material conditions of rural Gujarat.

Sir Thomas Middleton was kind enough to give me a letter of introduction to the president of the International Institute of Agriculture, Rome. It was through his courtesy that, I came in touch with the agricultural institutions in Italy like the Cattedre ambulanti del agricoltura* and the Confederazions Nazionale Fascista degli Agricoltori and Confederazions Nazionale dei Sindacati Fascisti dell' Agricoltura. I am grateful to Prof. Fileni the director of " Cattedre Ambulanti " who put me in touch with the travelling lecturers of agriculture throughout Italy. In Italy however I confined my investigations to a small zone between Rome and Naples. I selected the commune of Cassino in the province of Frosinone in Latium. There is very little irrigation in Cassino and the cultivation is largely confined to the growth of cereals. The average holdings are as small as in Gujarat.

In Gujarat I made a close investigation into the economic conditions of two villages in the Surat and Kaira district [1] and some villages in the Baroda State.[2]

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* Travelling lecturers.

1 Wadhwania.Bodal,

2 I am indebted to the Pragati Adhikari for much of the information about the village of Bhadkad in Petlad taluka of Baroda State.

I have not attempted to make a detailed economic survey of any village in Gujarat. My main idea in this thesis is to show in what directions improvements can be made in the present economic organisation of rural Gujarat. In spite of the neglect of agriculture on the part of the Italian state the agrarian conditions in Italy have distinctly improved during the last fifty years. I asked some of the travelling lecturers for the cause of this progress, and they said that it was due to the industry and tenacity of the Italian peasants, the institution of cattedre ambulanti and lastly, as regards Central Italy, the system of mezzadria which brings about a harmonious combination between agricultural labour on the one hand and capital and direction on the other. The proprietor provides each family of metayer with working cattle, implements, land and house to live in and direction, and the labour is provided by the mezzadria and the members of his family. I thought that a system of crop-sharing, if modified on the Italian lines, would bring considerable improvement to Gujarat agriculture and also to the condition of the tenants. I examined the question of the sub-division of land in Italy and lastly the problem of Italian agricultural labour.

I have relied on published material and Government publications, both in Italy and India, to supplement my personal investigations.

CONTENTS.

CHAPTER I.

Physical features.

In the following pages I have made an attempt to examine the economic conditions of rural Gujarat. The economic life of a country is largely determined by its physical environments, its geographical features, its climate, and soil, and the population. The human factor itself is largely influenced by physical environment. I will therefore begin first with a general description of the physical features of Gujarat.

A large part of Gujarat forms part of the Bombay Presidency and is included in the northern division of that presidency. It consists of five districts of Ahmedabad, Kaira, Broach, Panchmahal and Surat of the northern division. Another large part of Gujarat however is included in the territories of the Gaekwad of Baroda and the small Indian States of Reva Kantha and Mahi Kantha Agency.

The term Gujarat is often used for both the peninsula of Kathiawad and the main land of Gujarat. I have however confined myself to the main land of Gujarat only. The name "Gujarat" is derived from the older name "Gurjar-rashtra" so called after the tribes of Gurjars, perhaps of Scythian origin, which settled there between the fourth and fifth centuries A.D.* It is situated approximately between 20·5 and 24·9 latitudes N and 71·4 and 74·4 longitudes east. The territories of His Highness the Gaekwad of Baroda are closely intermixed with those of the British Gujarat, and lie in three compact blocks. The southern portion of the Gaekwad's territories lies mainly to the south of the river Tapti and forms

* Bombay Gazetteer edited by Campbell Vol. I Imperial Gazetteer Bombay Presidency Volume VIII Baroda Gazetteer. pp. 266-382.

the district of Navsari. The central portion is situated between the rivers Narbada and the Mahi and forms the Baroda district, while the northern portion which forms the Kadi district is to the west of Sabarmati. The Baroda territories closely resemble the adjacent British districts. The people, the language, the social customs and the physical configuration are the same. The Navsari district of Baroda is very much like the British district of Surat, while Baroda and Kadi districts closely resemble the British districts of Broach, Kaira and Ahmedabad. No picture of Gujarat would be complete without the inclusion of the Gaekwad's territories and I have therefore referred to the Baroda State throughout the thesis. The total area of the whole of Gujarat* is approximately 45,000 square miles with a length of 250 miles from North to South and one hundred and fifty to fifty miles in breadth from West to East. Its total population is about 9,000,000.

On the west of Gujarat is the Arabian Sea. To the North is Mount Abu, the East is guarded and limited by rough forest lands, rugged in the North, with side spurs of the Vindhyas, more open towards the central natural highway from Baroda to Rutlam, and southwards again rising and roughening into the northern off-shoots of the main range of the Satpudas. The Southern limit of Gujarat according to popular traditions is the small river Daman Ganga, near the Portuguese possession of Daman. This area consists very largely of rich alluvial plains, perhaps the richest in Bombay Presidency. Gujarat has always been known as the "Garden of India." A slight shower of rain turns the country immediately into green. This richness of Gujarat is the gift of the rivers Sabarmati, Mahi, Narbada and Tapti. Gujarat is the most densely populated part of the Bombay Presidency.

All the rivers of Gujarat flow from East to West and meet the gulf of Cambay. The Sabarmati rises in the South Western spurs of the Aravali hills and takes a southerly course and is joined by the Hathmati in Ahmedabad district.

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* Gujarat, exclusive of Kathiawad has an area of only 29,000 square miles.

It flows through a deep channel and its banks are very precipitous during its upper course. The stream is for the most part shallow and sluggish. Its bed, about fifty miles from the mouth of the river, is 1550 ft. wide and with a stream about 375 ft. broad in fair season. A noteworthy feature of the river is the formation, by its frequently varying currents, of tracts of mud deposit known as Bhatha. This forms the most fertile soil in Gujarat.

The Mahi has a course of 300 to 350 miles, with a drainage area of 15000 to 17000 square miles. After the Narbada and the Tapti, it is the largest of the Gujarat rivers. The Mahi rises in Malwa; like Sabarmati it also flows in a deep channel, between banks, at places, more than 100 feet high. It separates the district of Kaira on the right from the Panchmahal and Baroda on the left.

The river Tapti has a course of 450 miles and a drainage area of 30,000 square miles. It takes its rise in the Satpura Plateau, and flowing through the alluvial plains of the Surat district, enters the Sea through a narrow passage known as the Haranfal, it descends from Khandesh and enters the plain of Gujarat through the Dang forests.

The navigation of the Tapti is confined to the last seventy miles across the plains of Surat.

The river Narbada has a course of about 800 miles and a drainage area of 36,400 square miles. The source of the Narbada is in the hills of Amarkantak in the Bilaspur district of Central Provinces. For about five hundred miles from its source till it reaches Gujarat, its course is between the Vindhya Range on the right and the Satpura hills on the left. Its course across Gujarat before it meets the Gulf of Cambay is roughly about 100 miles. It passes through the district of Broach. Throughout this section of its course, the Narbada moves through the rich, flat plain between high rough banks of hardened mud and sand. The breadth of the bed of the river varies, but near the town of Broach, it is about a mile. The river is navigable throughout its course in Gujarat.

Apart from these big rivers there are small ones like the Watrak, the Dhadhar, the Vishwamitri, the Kim, the Mindola and the Poorna. During the monsoon, they become torrents and, in the hot weather, they get completely dried up. The Gujarat rivers are very deep with high banks and therefore not suitable for the purpose of irrigation. The drainage in Gujarat is defective and the rivers generally get flooded causing considerable damage. The Kaira district and particularly the subdivision of Matar is particularly liable to this. During the course of the last hundred years, the river Tapti was flooded about nine times, in 1810, 1822, 1835, 1857, 1876, 1883, 1884, and 1894. The Mahi, the Sabarmati and the Narbada are equally liable to floods.*

These floods cause considerable damage to cultivation and property and result even in loss of lives of men and cattle. Only last year, there was a heavy flood extending in area from the south of Baroda to Ahmedabad. A large number of houses were destroyed and many cattle were drowned. A few human lives were also lost. These floods require the careful attention of the Government. They are due to several causes amongst which, perhaps, the most prominent is the silting of the Gulf of Cambay. All the Gujarat rivers flow into that Gulf and consequently, there has been a rise in the bed levels of the rivers of Gujarat. The railways, which are constructed on a slightly higher level, have disturbed the natural drainage of the country. The old drainage lines have been silted up by the encroachment of the sea on the coast villages of Broach. The opening of the new drainage lines in the Gaekwad's territories is responsible for bringing more water into Gujarat. [1]

The soil of Gujarat is largely alluvial and may be divided into Kali and Goradu. The Kali is the black cotton soil and it is found largely in Southern Gujarat, in the

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* Statistical Abstract Bom. Presi 1925.

1. Sir F. Lely's Evidence before the Irrigation Commission. 1904. part 4 pp. 78. Report of the Irrigation Commission 1904 Part II p. 48.

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Surat.			
Jan.		May.	
Min.	Max.	Min.	Max.
60·1	90·7	80	97·5
56·6	87·4	79·7	95·9
59·6	90·7	80·2	95·5
58·5	84·9	80·7	98·7
59·1	88·6	78·9	102·8
52·4	93·6	68·6	104
50·2	94·4	74·8	103·2
52	91·8	74·8	106·9
56	88·6	70·8	110·1
52·8	94·9	76·2	109·3
48·8	91·1	73·2	...

Year.	Kaira.				Panch	
	Jan.		May.		Jan.	
	Min.	Max.	Min.	Max.	Min.	Max.
1912	54	89	82	116	56	92
1913	53	88	82	108	56	88
1914	59	81	83	113	54	94
1915	57	94	83	114	46	86
1916	61	100	80	116	...	...
1917	48	89	66	101	...	...
1918	48	93	73	108	54	88
1919	51	93	78	110	56	72
1920	58	92	74	112	60	98
1921	52	95	80	114	56	92
1922	48	91	76	110	58	93

Year.	Ahmedabad.		
	Jan.		Ma
	Min.	Max.	Min.
1902	52	96	77
1903	47	88	75
1904	64	92	85
1905	61	89	83
1906	59	88	83
1907	68	98	81
1908	50	91	71
1909	47	89	72
1910	46	92	72
1911	46	96	75

There is a wide variation between the minimum and maximum amounting to between 25o F and 30o F. During the summer Ahmedabad, Kaira and Panchmahal get very hot but Surat and Broach are little better owing to the proximity of the Sea.

The average annual rainfall for the whole of Gujarat is approximately 35 inches. It is higher in the Surat district averaging about 40 inches than in the districts of Northern Gujarat where it amounts to 29 inches. These are the figures of the average rainfall.

The character of the monsoon however in Gujarat varies from year to year. The rains are in some years much heavier than the average, in others the amount of rainfall is distinctly below the average. Sometimes there is a heavy rainfall in the early part of the season and the rains fail completely towards the end of the period. A few figures will give one an idea of the fluctuating nature of the Gujarat monsoon. The average rainfall for Ahmedabad district is about 30 inches, between 10″ and 15″ falling in July, and about eight in August and September. In 1927, from July 25th to August 2nd, there was a rainfall of over 45 inches. Such a heavy rainfall is equally damaging from the cultivator's point of view as a total scarcity of the rain. In 1899 the total rain–fall in the district of Ahmedabad amounted to 4·72 inches. In Kaira district in 1917 the rainfall amounted to 61·47 inches. The average rainfall is about 33 inches. In 1899 it amounted to only 6·05 inches. In Panchmahals in 1878 there was a rainfall of 64·14 inches, while in 1911 the total rainfall recorded was 7·52 inches. The average rainfall for the district is 39 inches. In Broach the average is 39·69 inches, but in 1878 the amount recorded was 67·85 inches, while in 1899 it was only 9·61 inches. In Surat where the average is about 39·81 inches the rainfall in 1878 amounted to 89 inches, while in 1904 it was only 9·61 inches.

This irregular and uncertain nature of the monsoon makes Gujarat sometimes liable to famines. Throughout the 19th Century Gujarat was fortunate enough to escape from

the calamities of a serious famine. In 1812–13 there was a bad famine, which was largely due to the destruction of the crops by locusts. Between 1813 and 1898 we have no record of any bad famine, but since 1899 Gujarat has been regularly visited by famines of greater or less severity. There was a severe famine from 1899 to 1902. The conditions were bad again in 1911–12, 1915–16, 1918–1919 and 1920–21.

In the past Gujarat had suffered from very bad famines. In 1629 and 1630 Ahmedabad passed through two years of famine so severe that the streets were blocked by the dying. The cause of the famine was want of rain and so great was the distress, that the people are said to have lived on human flesh. Poor houses were opened at Ahmedabad for the relief of the famished and the poor and money even distributed. All taxes were remitted for two years. In 1650 and 1686, there were famines again. In the 18th century in 1747 there was again a bad famine. Not a drop of rain fell, nor did a blade of grass grow.

In order to have a proper idea of what the famines meant in the past, I am quoting from Van Twist, a Dutch merchant who was in Gujarat during the great famine of 1630 in Shah Jahan's reign. I have taken this quotation from Mr. Moreland's book " India from Akbar to Aurangzeb ". 1)

" So little rain fell, that the seed sown was lost and no grass grew; cattle died. In towns and villages, in fields and on roads men lay dead in great number causing such a stench that it was terrible to use the ways. For want of grass cattle fed on the corpses; men took the carcases of beasts to eat; some in desperation went about searching for bones which had been gnawed by the dogs. As the famine increased, men abandoned towns and villages and wandered helplessly. It was easy to recognise their condition ; eyes sunk deep in the head, lips pale and covered with slime, the skin hard with the bones showing through, the belly nothing but a pouch hanging down empty, knuckles and knee caps

1) Moreland's " From Akbar to Aurangzeb " pp. 212 to 214.

showing prominently. One would cry and howl for hunger, while another lay stretched on the ground dying in misery. Wherever you went, you saw nothing but corpses.

" Men deserted their wives and children. Women sold themselves as slaves. Mothers sold their children.....Some of our Dutchmen coming from Ahmedabad found some people sitting at a little fire where hands and feet were cooking, a terrible thing to see. Even worse was it in a village of Susuntra where human flesh was sold in open market. This terrible divine punishment fell chiefly on the poor, who had nothing in store. Thus famine lasted throughout the year; pestilence and fever followed, so that scarcely a healthy man could be found. The dead lay scattered in the streets. Corpses lay for days in the houses because men could not be paid to carry them out. Wood could not be had for the pyres and unburnt corpses were burried or thrown into the river. "

Mr. Moreland observes that at the present day the " famines " which are spoken of in India are emergencies in which the state has recognized the existence of unemployment on a scale which, in the absence of a general poor law requires special measures of relief. The famines in the past about which we read in the chronicles of the 17th century were not work famines but food famines in the strictest sense, times when it was not a question of obtaining the means to pay for food, but of getting food at all.

The labours of successive Famine Commissions of 1874, 1880, 1898, and 1901 have now resulted in a formulation of definite famine policy. All premonitory symptoms are now anxiously watched, and when famine conditions become apparent, a policy of famine relief is immediately carried out. Relief works are started and poor houses are opened where deserving persons who cannot work on the relief works obtain food.

On the whole the people's power of resistence against famine has been much strengthened and a modern famine has not any of the horrors associated with it in the past.

The following figures[1] will give one an idea of the increased power of resistence in the people against the famines. They refer to Kaira district only.

	1899–1900.	1900–01.	1901–02	1911–12.	1918–19.
Average number of persons relieved daily.	75,294	12,596	21,941	6,093	7,918
Normal mortality.	29,942	29,942	29,942	23,743	20,055
Number of deaths over normal.	77,327	20,767	14,370	253	346
Total deaths during the year.	1,07,269	54,709	44,312	23,596	22,401
Poor houses.	10	...	...	...	...
Loss of cattle.	2,33,752	1,168	...	...	42,320

The annual rainfall figures are not so significant as the distribution of the rainfall throughout the season. Dr. Mann[2] remarks that the figures of effective rainfall are more important than the total rainfall. He believes that efforts must be made to gauge the volume of effective rainfall. This theory of effective rainfall consists of excluding the ineffective portions of the down pour, which rather drain off the surface than penetrate the soil and leaving out of account very insignificant falls which are evaporated on the hot earth as soon as they reach the land or of fixing a minimum amount of continuous moisture essential for the development of the crops. The study on these lines is still in its infancy, but with progress in that direction it is thought that it would be possible to say somewhat definitely and perhaps more correctly the position of a tract in a particular year so far as its seasonal factors dependant on rainfall are concerned.

1 Bombay District Gazetteer, Kaira and Panch Mahal Vol. III.

2 Census report of Bombay Presidency 1921–2. Statistical Atlas Bombay Presidency, 1925.

The recurrence of famines, is certainly an alarming feature. Dr. Harold Mann has given very interesting figures in his Evidence 1) before the last Royal Agricultural Commission to show the precariousness of agricultural industry in Gujarat. He assumes that whenever 40 p. c. of the current Government land revenue has to be remitted or suspended, it means essentially a crop failure over very large areas, when over 10 p. c. is remitted or suspended it means a very bad year. He quotes figures of land revenue suspensions and remissions for the seven years from 1918 to 1925 and shows that out of these seven years, only four were normal, two were of serious crop failure over large tracts, and one of partial deficiency of crops.

Year.	Current revenue demand.	Suspensions and remissions.	Percentage of suspensions to demand.
	Rs.		
1918-19	95,14,666	56,57,302	59·5
1919-20	96,36,966	1,53,471	1·5
1920-21	96,27,011	42,10,123	43·7
1921-22	95,59,058	2,26,419	2·4
1922-23	96,15,292	4,07,462	4·2
1923-24	98,18,489	24,45,466	24·9
1924-25	100,81,855	1,18,697	1·2

This precariousness of the monsoon makes the provision of irrigational facilities absolutely imperative. There are limitations to irrigation in Gujarat and according to Dr. Harold Mann's Evidence* only about 5½ p. c. of the total

1) Dr. Mann's Evidence before the Royal Commission on Agri. in India 1926. Vol. II Part I page 16 (iii).

*Evidence before the Royal Indian Agri. Commission 1927. Vol. II part I. p. 16 (vi)

cultivable area of Gujarat is capable of irrigation. All the same, all the available sources of irrigation must be tapped and all avenues for extension of irrigation facilities must be thoroughly investigated.

The chief sources of irrigation in Gujarat are (1) wells, (2) tanks, (3) Government canals. By far the most important source of irrigation is private wells. The agriculturist irrigates his land by lifting water from the wells by means of a Kos or leather bag. The persian wheel arrangement is rather rare in Gujarat. There are two kinds of Kos, Ramoshi and Sundhia. The Kos or the water bag is pulled by the bullocks from a well. As the bullocks move along a sloping ground away from the well, the leather bag is drawn from the well and as it comes up to the surface, it automatically empties itself into a sort of trough from which water is conveyed to the field by small channels. Sometimes the leather bag has to be emptied by another man who stands near the well and empties the bag as it comes up to the surface.

The tanks are generally built through private charity or by the Government, while the canals are usually constructed by the Government. In Bombay Presidency the irrigation works are divided into first class and second class works. For the first class works both capital and revenue accounts are kept and they are under the administration of public works department. For second class works only revenue account is kept, the P. W. D. merely maintains them. The lands irrigated by them are assessed at a consolidated rate. In other parts of India it is usual to divide the irrigation works into major and minor. In case of major works both revenue and capital accounts are kept but in case of minor works only revenue accounts are kept. Irrigation works are sometimes classified into productive and protective works. The productive works are constructed with a view to yield profit to the Government, whilst protective works are largely constructed to protect particular areas, which are periodically liable to drought. There are only two first class

irrigation works in Gujarat. Hathmati canal and Kharicut canal, both in Northern Gujarat. Their productive value is small. We will try and examine the progress of irrigation in Gujarat since 1891. I am quoting below figures of areas irrigated in Gujarat by all sources of irrigation for 1891, 1901, 1911, 1919, 1921, 1923, 1925, 1926 and 1927.

	1891	1901	1911	1919	1921	1923	1925	1926	1927
AHMEDABAD DISTRICT.									
Government canals	3,949	762	17,181	707	9,755	7,316	4,816	13,685	9,625
Private canals	...	...	...	...	...	336	402	2,046	27
Tanks	66,924	43,318	42,254	170	55,510	3,996	8,626	8,019	17,092
Wells	...	...	...	1,00,588	...	45,843	26,594	50,583	33,762
Other sources	...	1,910	2,801	2,273	2,811	1,216	1,447	13,688	1,703
Total	70,873	45,990	62,236	1,01,730	71,076	58,698	41,885	88,021	62.209
KAIRA DISTRICT.									
Government canals	4,850	8	8,305	...	8,867	3,388	2,170	3,309	7,403
Private canals	...	...	...	...	...	...	...	...	...
Tank	37,439	35,804	29,365	58,929	30,382	22,017	555	30,146	21,443
Wells	...	...	...	...	...	...	14,370	30,146	21,443
Other sources	...	668	2,542	3,027	469	461	198	440	536
Total	42,289	36,480	40,212	61,956	39,718	26,502	17,293	38,676	33,409

PANCH MAHAL DISTRICT.										
Government canals	...	...	207	960	577	1,060	693	660	1,404	
Private canals	7,705	3,552	2,816	10	3,124	157	3,083	266	153	
Tanks	...	...	...	5,379	...	6,774	...	1,139	2,255	
Wells	...	...	...	...	...	...	...	...	...	
Other sources	...	60	1	266	...	142	245	...	...	
Total	1,705	3,612	3,024	6,615	3,701	8,133	4,021	2,065	3,812	
BROACH DISTRICT.										
Government canals	...	1	...	...	...	...	...	...	...	
Private canals	...	...	...	...	...	...	...	...	...	
Tanks	...	...	...	762	791	203	...	3	...	
Wells	763	864	521	326	...	721	568	709	740	
Other sources	...	1	...	...	...	...	...	...	...	
Total	763	866	521	1,088	791	924	568	609	740	

	1891	1901	1911	1919	1921	1923	1925	1926	1927
				SURAT DISTRICT.					
Government canals	...	90	...	...	...	...	...	...	...
Private canals	...	...	...	...	...	...	...	...	...
Tanks	10,711	8,488	10,642	1,436	7,899	1,723	2,021	1,191	1,186
Wells	...	...	...	6,180	...	5,896	4,950	4,945	5,724
Other sources	...	164	141	197	35	31	34	24	22
Total	10,711	8,752	10,783	7,873	7,954	7,650	7,005	6,160	6,932
Grand Total for the British Gujarat.	1,26,341	75,700	1,16,676	1,81,210	1,23,240	1,01,970	70,772	1,35,531	1,07,102
Percentage of irrigated area to the net cropped area	3·6	3·7	3·6	5	3·3	2·6	1·6	3·3	2·6

These figures do not show any marked expansion of irrigation in Gujarat. According to the irrigation commission report of 1904, the net cropped area in Gujarat was 3,572,000 acres and 246,000 acres were irrigated.(1)

The area under irrigation in that year was 6 p. c. of the net cropped area. The irrigated area has not exceeded that figure since then. In 1918–19 the area under irrigation was 5 p.c. of the net cropped area but the average irrigated area for the last twenty years works out at 3.5 p. c. of the net cropped area. Irrigation seems to have remained stationary in Gujarat. In spite of the fact that there is a slight increase in the total number of wells for irrigation in Gujarat compared to 1911, there is no increase in the area irrigated. It means that some of the wells must have gone out of use.

	Wells.		Tanks.	
	1911	1921	1911	1921
Ahmedabad	16,396	17,273	1,053	1,275
Kaira	11,067	12,282	1,411	1,195
Panchmahals	3,225	3,405	4	36
Broach	7,545	7,386	1,194	1,062
Surat	1,167	1,189	...	1,127
Total...	39,400	41,535	...	...

One noteworthy feature, that these figures reveal is that by far the most important source of irrigation in Gujarat is private wells. Irrigation is more common in the Ahmedabad and Kaira district and almost insignificant in Broach.

Every effort must be made to encourage irrigation by Government canals where their construction is possible and to stimulate private efforts in irrigation by grant of cheap

(1) Report of Irrigation Commission 1904, part II, pp. 46.

Takavi loans for digging wells. It is believed that in Gujarat the level of subsoil water is receding. If boring operations could be useful to the cultivators the Government should assist in the necessary operations. Boring operations are being carried out by the agricultural department and it is to be hoped that the cultivators in future will avail themselves more frequently of these facilities. Power pumps are used in some places in Gujarat for irrigation and with extension of co-operative efforts, it is to be hoped irrigation will be pushed on as far as it is possible.

There is a strong current of opinion in Gujarat that it has been neglected as far as irrigational facilities are concerned. The evidence before the Royal Commission on Indian Agriculture of 1926 bears out that view. Messrs. D. P. Desai, Bhimbhai Naik, and Kothawalla have urged before the Commission the necessity of further extension of irrigation in Gujarat. If one looks at the capital expenditure on irrigation works in Gujarat and compares it with Deccan and Sindh, it becomes apparent that Gujarat has been neglected.

Capital expenditure on irrigation works upto 1927

Gujarat	Rs.	24,63,883*
Deccan	„	9,49,84,574
Sindh	„	10,22,49,056

It has been contended that the Government has not utilised the water resources of Gujarat rivers for the purposes of irrigation. Schemes had been brought forward from time to time for constructing irrigation works on the Tapti, the Narbada and the Sabarmati. These schemes, however, have been viewed each time by the Government with less and less favour, on the ground that they were not remunerative and that they were unpractical and that there were certain difficulties about irrigation in Gujarat.†

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* Debates of the Bombay Legislative Council 17th March 1928, Vol. xxii part xxiii.

† Indian Irrigation Commission 1904, part II. pp. 52-54.

In the Kali soil where cotton is the staple crop, it matures without irrigation and thrives best in a year of light rainfall, though it fails in the season of extreme drought.

In a year of heavy rain cotton is generally injured and hence the practice of growing rice with cotton. The black cotton soil is not suitable for irrigation except for rice. The reason is the extraordinary absorbent nature of the soil which would absorb considerable water if artificially irrigated. Mr. Mcllison was of opinion that to introduce canal in the black soil would do more harm than good. In Panchmahal, the character of the people offers obstacles. The population consists of Bhils and Kolis who are too lazy and poor to cultivate better class of crops which can stand the expenses of irrigation. Without proper supply of manure, irrigation would be unprofitable.

There is no country in the world which is so careless about its manure supply which is the food of the soil as India. The dung of the cattle is used for fuel and for making the floors of the houses in Gujarat. Religious sentiment prevents the cultivators from using the night soil and bones and fish. Artificial fertilizers would be too expensive for the ryots. The export of oil seeds results in the export of a large supply of cattle fodder and manure.

Another great difficulty about utilising the Gujarat rivers for purposes of irrigation is that they are all very deep, 30 feet and upwards below the natural surface of the country, and are subject to violent and enormous floods. The head works for any canal including a weir and head regulator would be very expensive and long deep channels will have to be dug before the command of the country could be obtained. Supply of water between November and May is very small and precarious. Rabi crops cannot be irrigated unless storage works are also constructed. The site of the suitable storage works might be outside British India and therefore the scheme could only succeed if the Indian states would also co-operate.

We have discussed the existing irrigational facilities in British Gujarat, we will now give a short account of progress in irrigation achieved in the Baroda State largely during the life of the present ruler. Small irrigation works are met all over the Raj, especially what are called "Paddy Tanks" whose object is to protect rice, the chief of the monsoon crop, by giving it water during a break in the rains and more especially giving it the last one or two waterings, to mature it. The number of such tanks in each Taluka varies with the nature of the staple crops, nature of the soil, intelligence, skill and capacity of the cultivators. Navsari division, which has rich and good irrigable soil, intelligent cultivators and high class crops, is singularly fortunate in the possession of a large number of paddy tanks. Almost every village in each Taluka possesses one or more of these tanks. Baroda division comes next to Navsari, in point of their number and the rice growing talukas of Vaghodia, Savli and part of the Baroda Taluka abound in them. Kadi division has also a fairly large number of such tanks especially in the two talukas of Kadi and Kalol where rice is extensively grown. Its cultivation, is, however, falling off owing to the scanty and ill-timed rainfall of recent years and the state of dis-repair of some of the tanks. Apart from paddy tanks, there are " Bandharas " or weirs thrown across the water courses and the impounded water is led by channels to irrigate the fields. The Allidhar Vellar bund near Harmadia, the Natilia bund near Dhari in Amreli division and the Chikli and Bandharpada in Navsari division may be mentioned as instances of this form of irrigation. 1)

Besides these small paddy tanks, large irrigation works have been constructed at a cost of about 39 lacs of rupees. These irrigate about 6,500 bighas of land. All over the State there are about 18,400 kachha and 60,054 pucca wells. Special officers are appointed to grant Takavi loans for sinking new wells and some of these wells are built with Government assistance. All these irrigation works irrigate from four to five per cent. of the area actually cultivated each year.

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1) Baroda Economic Enquiry Committee Report.

Year.	Net cropped area in Bighas.	Irrigated area.	Percentage of three to two.
1925–26	5,121,950	226,171	4·3
1924–25	5,326,651	197,855	3·6
1923–24	5,117,990	267,312	5·2
1922–23	5,336,614	248,688	4·3
1920–21	5,165,281	230,368	4·3
1918–19	4,327,714	290,167	6·5
1916–17	5,015,923	260,160	5·3

In connection with irrigation, Gujarat has to learn some useful lessons from Italy. Except the Sub Alpine belts, and some part of Alpine table land irrigation is absolutely necessary in Italy also. In Italy, however, in the past it was largely due to private efforts that irrigation works were built up in Lombardy. It is estimated that these works, to which South Lombardy owes its productivity, represents an outlay of no less than one thousand million gold lire on area of 22,23,900 acres or about Rs. 225 per acre. On the other hand in the South irrigation has been largely neglected and the Italian Government is only now taking steps to encourage irrigation. The ministry of national economy is empowered with the object of promoting the increase of agricultural production by means of irrigation works, to cause to be made and to subsidize enquiries and to draft schemes relating to these works and to the improved utilisation of the surface and subterranean waters more particularly in the interests of the southern provinces. The ministry of national economy is entrusted with the power of subsidizing investigations of subterranean waters, borings, construction of wells, installation of wind pumps and electric plants connected with water distribution scheme for irrigation of waterless land on the application of individuals, provinces, communes and agricultural

consortia. The State contribution is to vary from 35 to 45 per cent in North Italy and 35 to 50 per cent in South Italy. There are in Italy various systems for the supply of water. When only a limited quantity of water is required for citrus plantation and vegetable gardening it is as a rule raised from underground by means of poles worked by hand or water wheels worked by animals, as is the case in South Italy. There are petrol and electric pumps in Ligurian Rivers, while in the Po valley there are hydro electric plants. Just as in India, there are reservoirs of rain water like those of Tirso in Sardinia. The largest irrigation works are those known as " Cavour " which irrigate the region between the Po and the Ticino. In Italy irrigation has been largely confined to the North and chiefly to Lombardy. The State has only now realised the importance of irrigation and most of the irrigation works in Italy are due to private enterprise.*

*International Review of Agricultural Economics 1928 Irrigation in Italy. Published by the International Institute of Agriculture. Rome.

CHAPTER II.

The Population.

The population of British Gujarat according to the census of 1921 was 2,958,849 excluding that of the Indian States. The population of Baroda State was 2,126,522. Out of this total population of the British districts of Gujarat 765,666 lived in towns, while 2,193,183 lived in villages. The bulk of the population of Gujarat is therefore rural. The detailed figures for each district are :—

District.	Total.	Urban.	Rural.	Percentage of rural to total.
Ahmedabad ...	8,90,911	3,65,301	5,25,610	58
Kaira ...	7,10,982	1,16,534	5,94.448	83
Panchmahal...	3,74,860	54.758	3,20,102	86
Broach ...	3,07,745	70,096	2,37,649	79
Surat ...	6,74,351	1,58,977	5,15,374	78
Baroda State..	21,26,522	4,40,823	16,85,699	79

The urban population is largest in Ahmedabad but it is due to the inclusion of the city of Ahmedabad which is the second biggest centre of cotton manufacture in Bombay Presidency. There are only 36 towns in the whole of Gujarat and 3,200 villages. There is a common belief that the Indian population is getting rapidly urbanised. There is no foundation for such a belief.

Gujarat.

Number of places with population of.			1891	1921
Above		10,00,000	...	...
1,00,000	—	10,00,000	2	2
50,000	—	1,00,000	...	...
20,000	—	50,000	3	4
10,000	—	20,000	12	10
2,000	—	10,000	250	180
500	—	2,000	1,401	1,336
Below 500			1,630	1,772

The statistics show an increase in towns with population between 20,000 to 50,000 while a marked decrease in towns of population under 20,000. There is a tendency for smaller towns which were once the centre of domestic or cottage industries to decay, while large towns to become still larger.

Urbanisation is proceeding slowly and at the expense of smaller country towns and not villages.[1]

A comparison with some of the foreign countries would show that Gujarat is still predominantly rural.[2]

Percentages.

Countries.	Urban Population		Rural Population	
	Pre war	Post war	Pre war	Post war
Germany	60·0	64·4	40	35·6
Denmark	40·3	44·4	59·7	55·6
France...	44·2	46·3	55·8	53·7
United States	45·8	51·4	54·2	48·6
England & Wales ...	78·1	79·3	21·9	20·7

In Gujarat the population consists largely of the Hindus. The Mohomedans form only 11 p. c. of the total population. There were only 38,331 Christians and about 15,000 Parsis in Gujarat districts according to the census of 1921.

An analysis of the population of the two villages I surveyed will give a fair idea of the total Gujarat population.

The population of Ucchrel, a village in Bardoli taluka, is 331. It consists of 150 Kanbis, 144 Dublas, 8 Bhangis and 4 Dheds, 15 Bharwads, 5 Bavas, 1 Rajput, 1 Barber. This is a typical Kanbi village of Surat district and hence such a

1. Census report 1921. Bombay Presidency General Report part I page 50.
2. International Economic Conference Agricultural Problems in their international aspect p. 412.

large population of the Kanbis but every village has its barber, its Bhangi and a small Dhed population which generally works as weavers. For agricultural labour, the cultivators have to rely on the Dubla population. In almost all the Gujarat villages there is a high class Ujli paraj population and a large percentage of inferior Kali paraj population from which agricultural labourers are drawn. The population of North Gujarat differs a little from that of the South. I am quoting some figures of the Bhadkad village in Petlad Taluka in Baroda State adjoining the British Kaira district. It has a total population of 1,218. It consists of :—

Brahmins	22
Banias	96
Kanbis or Patidars	376
Dharalas, Kolis and Vagharis ...	401
Rabaries	26
Carpenters, Barbers ... ... } Blacksmiths, Potters ... ... }	54
Rajputs	12
Mohamedans	49
Dheds and Bhangis	172
Sadhus	7
Christians	3
	1,218

In the North Gujarat the agricultural labour is drawn from the Kolis, a class which corresponds to the Dublas of the South Gujarat.

The agricultural population belongs largely to the following important castes : Anavalas, Kanbis, Kolis, Bhils, and Dublas. There is a small sprinkling of Bohra population in Broach district. In the Surat district the agricultural labour is drawn from the people known as Kali paraj (black people) as contrasted with the higher castes known as Ujli paraj (fair people). It is from this Kali paraj that Halis or indentured labourers are drawn, who are almost semi-slaves.

The Anavils,* sometimes known as Bhatelas, numbering 30,325 are found in Surat district and the Baroda territory. They are the best cultivators of South Gujarat. The name Anavil is derived from Anaval, a Gaekwad village about 40 miles east of Surat. It was largely due to their efforts that the south of Gujarat was recovered from forests and brought under tillage. Though they are obstinate, rough and quarrelsome, they are full of enterprise, hospitable and liberal. Fifty years ago, almost all of them were agriculturists and even though tillage is still the occupation of a large majority among them, an increasing number are giving up the land and becoming accountants, school-masters and taking up Government services. Amongst the Anavalas, there are Desais, who were the revenue farmers during the Maratha regime. They held grants of money and land and they looked down upon the others of their caste and called them Bhatelas. The Desais enjoyed considerable power and wealth during the Maratha regime and even for some time after the advent of the British in South Gujarat, either as farmers of revenue or village managers. They claimed the rank of superior landlords with the titles of Zamindars and Talukdars and possessed households of as many as 400 dependants. Under cover of their office, they levied taxes on their own behalf and for a time the bulk of the peasants were their tenants at will or sometimes bondsmen. The gradual extinction of the practice of farming the land revenue and the establishments of the cultivators as direct holders of the land from the Government took away from the Desais much of their source of wealth and power. A very large portion of the Desais are now in debt owing to their extravagant expenses at the time of important ceremonies, like the marriages of sons or daughters or ceremonies connected with death of the parents. Even now the Anavalas hold the largest holdings in the best Surat villages and produce the richest crops. They own the finest cattle and the best built houses.

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* Enthoven's Tribes and Castes of Bombay, 3 Vols. Vol. I p. 225-228.

Corresponding to the Anavils of South Gujarat, the ablest and most enterprising caste of cultivators in North Gujarat is Kanbis,* sometimes known as Patidars. They are divided into two chief subdivisions of Leva-Kanbis and Kadva-Kanbis. They number about 9,45,859. They are probably Gujjars in origin. The majority of them are cultivators, though some of them are either weavers of silk and cotton and are dealers in cotton and grain. Some of them have attained important positions in the government services. Many of them are village headmen or Mukhis and enjoy allowances in cash or kind. There is however of late a tendency amongst them to abandon the land and go in for professions or government services. They migrate to Africa, and a large number of them now proceed to England either to be called to the bar or qualify themselves as engineers. They are, however, the best husbandmen not only in Gujarat but throughout India. "They are learned in the property of every soil and minutely acquainted with the wants of every crop." Like the Anavala Desais they were also at one time farmers of revenue and middlemen between the Government and the cultivators. Like the Anavala Desais, they extorted crushing taxes from the ryots. For many years after the introduction of the British rule, inspite of their skill and steady work, their extravagance at marriages kept them in depression. The competition to marry their daughters into higher families was very keen and great sums were paid to secure the honour.

The marriage of the daughter costs them so heavily that at one time girl infanticide was very common among them. The British Government in co-operation with the Baroda State had to intervene to put an end to this custom; and steps were taken to limit the marriage expenditure.

Bhils[1]

The original home of the Bhils was most probably the hilly country between Mount Abu and Asirgarh. The word

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* Enthoven's Tribes and Castes of Bombay Vol. II 134–154.

1. Enthoven's Tribes and Castes of Bombay Vol. I.

Bhil is probably derived from " billee " the Dravidian word for Bow or " Bhil " to cut. They are the pygmies described by Ctesias and Ptolemy. They are small, light-limbed and active. Their dress consists of a Falia[2] on head and a pichodi (a strip of long cloth) thrown over the body and potiu (a small piece of cloth round the loins). The women wear Sallo,[3] Kanchli[4] and Ghaghro[5]. The Bhils may be divided into Gujarat bhils and Khandesh bhils. Some of the Gujarat Bhils have a strain of Rajput blood in them. They are to be found in Prantij, Modassa and other districts of Northern Gujarat. Pure bhils are to be found in Eastern and Southern Gujarat—in Panchmahals and Revakantha. Bhils are mostly peasants, labourers and watchmen. They are not very good cultivators.

Kolis[1]

According to Mr. Enthoven, the term Koli has a vague meaning covering a number of tribes of inferior status which have little in common beyond a position inferior to the Kanbi or cultivating caste. In Gujarat some of the Kolis have gained an improved status by inter-marriage with Rajputs. There are several general terms in use among Kolis such as Dharala and Talabda. In Kaira, where Kolis are most numerous, they are known as Dharalas. In Ahmedabad district the Koli aristocracy is represented by the Koli Patelia or Talabda, while the inferior Kolis are called Thakardas. Bishop Heber has given an interesting account of the Kolis from which I quote an extract: " These (Kolis) form perhaps two-third of the population and are considered by the public men in Gujarat as the original inhabitants of the country. I suspect, indeed, myself that the Kolis are only civilised Bhils, who have laid aside some of the wild habits of their ancestors and have learned to conform in certain respects to their Hindu neighbours. They themselves pretend to be descended from the

2. A piece of cloth.
3. Long cloth to cover the body.
4. Bodice.
5. Skirt.
1. Enthoven's Tribes and Castes of Bombay Vol. II. p. 243-259.

Rajputs." Their ostensible and, indeed their chief employment is agriculture, and they are often said to be industrious farmers and labourers[2]. At one time the Kolis formed a very troublesome part of the Gujarat population. They delighted in plunder and nothing was more welcome to them than a general disturbance in the country. They were averse to regular industry, exceedingly addicted to drunkenness and very quarrelsome when intoxicated.

The Bohras are found in large numbers in the Broach and Surat districts. They are the most enterprising traders of the Bombay Presidency but a very large part of them also cultivate land in Broach district and they are Sunnis by religion. The trading Bohras are generally Shiahs.

Sunni Bohras appear to be descendants of the Hindu converts. Many peasant Bohras know to what Hindu caste their forefathers belonged. They were probably converted at the close of the fourteenth and during the fifteenth centuries. Almost all Sunni Bohras are land-holders and peasants. If they are poor their women help them in field work and if they are rich they maintain Halis or farm slaves who are usually of the Chodhra or Dubla or other aboriginal tribes. The Bohras are some of the best cultivators in the Broach district[1].

The population question has a special importance in Gujarat. There might be two villages in Gujarat with the same natural advantages and the same kind of soil. Yet there will be a great difference in their economic conditions, if they are occupied by different agricultural castes. A Kanbi village would be more prosperous than a Raniparaj village and the fields owned by Kanbis would be better cultivated than those owned by Raniparaj. The yield per acre is always higher in Kanbi villages than in Raniparaj villages and on the whole Kanbi cultivation is much more careful.

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2. Narrative of a Journey through the upper provinces of India, III pp. 25 ff.

1. Enthoven's Tribes and castes of Bombay Vol. I p. 197-207.

In the North Gujarat one has only to compare the Koli villages with the Patidar villages to see what difference it makes when a village is inhabited by a more intelligent and industrious caste of people. Unfortunately in Gujarat there is a tendency amongst the Kanbis and Anavalas to lease their lands and leave the cultivation in hands of inferior castes. The bulk of the Gujarat rural population belongs to the inferior castes of Dublas and Kolis.

According to the census of 1921 there were 1,545,376 males and 1,413, 473 females. There were 936 females to every 1000 males in Gujarat. In Gujarat as in many other parts of India, the male population is larger than that of the females. In the Western countries the females generally outnumber the males. This difference may be due to racial and climatic causes and also due to the fact that the female children are held less in estimation and are consequently neglected. At one time amongst the Rajputs and the Patidars of Gujarat, the custom of girl infanticide was very common. Almost every one marries in Gujarat. 46 p.c. of the total male population are married 45.3 are unmarried and 18·7 are widowed. Among the females 50.7 p.c. are married, 33.3 are unmarried and 16 p.c. are widows.[1] If we look at the percentage of married persons to the poulation between the ages of 15 and 40, it would be however much greater. There were 608,070 males between the age of 15 and 40 and 425,438 among them were married and 141,461 were unmarried and 41,171 were widows. 70 p.c. of the male population between 15 and 40 were married, 6.9.p.c. were widowers and only 23·1 were unmarried. The female population between 15 and 40 was 543,316 and 462,329 were married 54,322 widows and 26,665 unmarried. 85 p.c.

1. Social Structure of England and Wales (Carr–Saunders and Jones) p. 8 gives us the figures of married population in England and Wales.

	Males.	Females.
Single	55·5	53·5
Married	41·4	38·3
Widowed	3·6	8·2

were married, 10 p.c. were widows and 5 p.c. were unmarried.

The social and religious customs look with disfavour on celibates. There are a few celibates in Gujarat, but they are religious celibates who have renounced the world and become Sanyasis. They however form an insignifcant minority. Marriage is not only almost universal in Gujarat but in many cases the marriage tie is contracted at a very early age. It is hard for the people in Gujarat to understand how a man can remain celibate as long as he has a chance to marry. Mr. Wattal says " A Hindu male must marry and beget children–son, if you please–to perform his funeral rites, lest his spirit wander uneasily in the waste places of the earth. A Hindu maiden unmarried at puberty is a source of social obloqy* to her family and of damnation to her ancestors." Marriage before puberty is not uncommon in India. The statistics clearly show that this custom has not to any appreciable extent become less frequent. In 1921 there were 169 married girls between 0 and 1 year, 2699 married girls between one and five, and 9,519 between five and ten years in the Ahmedabad district. The conditions are nearly the same in other districts.‡

Number of married girls in the Gujarat Districts.

Age group	Broach.	Kaira.	Panchmahal.	Surat.
0– 1	22	105	23	29
1– 5	327	2,378	318	420
5–10	2,850	14,933	2,002	6,024

* P. Wattal Population problem in India.

‡ Census Report of Bombay Presidency 1921. General Report Part I page 124.

Unmarried girls per thousand in Bombay Presidency.

Age group.	1891.	1901.	1911.	1921.
0- 5	976	983	971	977
5-10	821	878	836	860
10-15	403	486	440	486
15-20	89	147	111	125

It would be interesting to examine the composition of the total Gujarat population. According to the census of 1921 out of the total population of 2,958,849 1,174,831 were under 15. and 1,656,637 between 15 and 60 and 127,381 over 60 years. 39 p. c. of the population was under 15, 4 p. c. was over 60 and 57 p. c. between 15 and 60. If we examine the age group in England we find 28 p. c. of the population under 15 and 66 p. c. between 15 and 65 and 6 p. c. over 65. In India, the duration of life is much shorter and people get old much sooner than in the temperate countries. I have therefore taken 60 years as the working age in India as compared to 65 in England. Generally persons over 60 are dependants and do not produce economic wealth. The dependent population is therefore 43 p. c. in India compared to 34 p. c. in England. Even from this working population, deductions must be made as customs and traditions forbid women of the higher classes to work and therefore the number of wealth producing people is much smaller in Gujarat than the figures show. The actual workers in Gujarat, according to the census of 1921, were 895, 149 males, and 396, 668 females. 58 p. c. of the total male population were workers while only 28 p. c. of female population were active workers.

We will now try to examine how far the population in Gujarat is pressing hard against the means of subsistence.

No definite reply could be given to a question of this nature without a careful study of the existing wealth potentiali-

ties of wealth production in Gujarat. It is a very complex question and all the factors bearing on the problem must be taken into consideration. For every country at any given time taking into consideration its method of production and its average efficiency of organisation, there is an optimum population which it can maintain, at the highest level of comfort.* If the population is below this optimum point, it can support a larger population and increase in numbers would be beneficial; but if the population is above the optimum point, an increase in numbers, other conditions remaining unaltered, would press harder and harder on the available means of subsistence. Any improved means of production or any contrivance which can increase the means of subsistence would relieve the pressure.

In Gujarat the growth of population received serious checks owing to the famine of 1901, the plague which followed it and influenza epidemic of 1918. The population increased from 1872 to 1891. There was a sharp fall in 1901 and since then there has been a very slow rise.

Year.	Population.
1872	2,814,207
1881	2,857,731
1891	3,098,197
1901	2,702,099
1911	2,803,074
1921	2,958,849

The influenza epidemic of 1918 carried away 28,419 persons in Ahmedabad district alone. In Broach, Kaira Panchamahal and Surat, the total number of deaths due to influenza were 15,158, 23,574, 11,000 and 21,834 respectively. The frequent plague epidemics and the economic dislocations caused by famines are perhaps nature's unconscious checks on the population which is pressing hard against the means of subsistence.

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*Carr Saunders–The population Problem chap ix pp. 197–242.

The density of population in Gujarat is 292 per sp. mile. It is lower than in Bengal and United Provinces and even Italy.[1] Some of the districts like Kaira and Surat have a very high density amounting to 445 and 408 per sp. mile respectively.

There has been no rapid rise like that in Italy. The population of Italy has gone up from 25,000,000 in 1862 to 41,000,000 in 1924.

Year	Population
1862	25,000,000
1872	26,801,154
1882	28,459,628
1901	32,475,213
1911	36,101,187
1921	38,835,941
1924	41,000,000

In Italy however the pressure of population was relieved by emigration.

Italian	Emigration.
1910	651,875
1913	872,598
1917	46,496
1920	412,221
1921	278,640
1922	276,964
1923	403,653

There is very little emigration from Gujarat outside India. In 1924 the total number of emigrants from India was little over a million. 70 p. c. of the emigrants were from Madras, while the whole of Bombay Presidency only contributed 20,000. There was a slight migration from Gujarat to Bombay amounting to 321,756, but on the other hand there were 332,394 immigrants in Gujarat from Kathiawad. In many of the Gujarat villages however, I came across many

1 Bengal 608, the United Provinces 427, Italy 343.

instances where one or more members of the family have gone to Africa.

In 1898 the settlement officer writing about the Jalalpur Taluka said " In this connection I may note that nothing has struck me more on my return to the district than the extent of emigration from this Taluka to South Africa, Rangoon, Mauritius and other places outside India even including Klondyke. This emigration is not confined to any one class or caste. Anavlas, Kanbis, Kolis, Dheds and Mussalmans from all parts of the Taluka in fact all who cannot make both ends meet at home and who can raise the expenses for the journey, leave the homes in the hope of rapidly attaining wealth. Although this emigration may be a favourable sign, it is, I submit, a certain indication of the pressure of population. "[1]

In the two villages of Uccherel and Wadhwania I found on inquiry a few instances of emigration to south Africa.

The statistics of registered birth rate and death rate are equally illuminating.[2]

Year	Birth rate.	Death rate.
1911	40	27
1912	40	39
1913	39	31
1914	42	32
1915	42	26
1916	44	34
1917	42	41
1918	38	80
1919	35	33
1920	36	34
1921	36	26
1922	36	25
1923	38	27
1924	41	28
1925	42	25
1926	40	35

1. Selections from Bombay records ccccv Report on the Revision Settlement of Jalalpur Taluka Surat district.
2. Census Report 1921.

For comparison I quote the birth rates and death rates of some European countries.

	Birth rate.		Death rate.	
	1901–04	1925	1901–4	1925
England & Wales.	28·4	18·3	15·2	12·2
Sweden.	26·2	17·5	15·4	11·7
Denmark.	29·2	21·1	14·8	10·9
Germany.	34·7	20·6	19·9	11·9
France.	21·4	19·1	12·6	17·7
Italy.	32·6	27·5	21·9	16·6

In Gujarat there is a high birth rate accompanied by a heavy death rate. The natural rate of increase is not much greater than England, but children are brought into the world to die in a few months. The harm it does to the women who bear children is hardly realised.

It is argued by Risley in his Census Report of 1901 and by Professors Wadia and Joshi in their "Wealth of India" that there is a vast amount of land which is uncultivated and could easily be brought into cultivation. Irrigation would make cultivation possible where to-day the land is uncultivated. In Gujarat, however, nearly all the available land is cultivated. In Ahmedabad district only 4·4 p. c. of the land which might be available for cultivation is not occupied. In Kaira 2·1, Panchmahal 7·2, Broach 2·8, and Surat 5·7, of the land available for cultivation is unoccupied. This land must be of a very inferior character and the cultivation of it, therefore, will not support a much larger population. Irrigation has its limitations in Gujarat, and the expert opinion is that there is no considerable room for expansion of irrigation in Gujarat.

In Gujarat, as in Italy, the only way of maintaining any increase in the population is by improved methods of production. The growth of industries might suppport a larger population: under the present circumstances, however, population is presssing hard on means of subsistance. Every available piece of land has to be cultivated. The average size of holdings in Gujarat is about 8 acres. The pressure on land could only be relieved by an increase in production, or a limitation on the number of mouths to be fed. It makes one seriously ponder over what Mill says, " the producing of large families should be regarded with the same feelings as drunkenness or any other excess. "

CHAPTER III.

Distribution of Land and Land Tenure.

In Gujarat the greater portion of the land is held by small peasant proprietors. 4,849,506 acres of land are held under Ryotwari tenure by small proprietors, while only 1,674,215 acres are held under Talukdari tenure.[1] 75 per cent of the land is owned by small proprietors, who generally cultivate the land themselves and in some cases sublet it to the tenants. More than 60 per cent of the land owned by these small proprietors is directly cultivated by them. The agricultural population in Gujarat can be divided, just as in Italy, into the following divisions :—

(a) Landlords living on rent alone.

(b) Small proprietors cultivating their own lands by their own labour and the help of the members of their family. Only a small number of such proprietors, however, own land which is sufficient to maintain themselves and their families while the rest have to lease more land or work as agricultural labourers.

(c) Tenants who lease lands for short periods, either on payment of cash rent or on an agreement to share the crops.

(d) Agricultural labourers.

According to the census of 1921, there were 30,297 landlords; 253,307 cultivating owners; 116,786 cultivating tenants and 316,218 farm labourers.

1 Land Revenue Administration Report of the Bombay Presidency 1925–26.

In Italy there were in 1921 :—

3,427,522 farmers cultivating their own lands,
35,546 tenants on long lease,
658,178 tenants paying cash-rent,
1,589,976 tenants on a crop-sharing basis,
4,007,723 agricultural labourers.

In Deccan a larger proportion of peasant proprietors cultivate their land than in Gujarat. In 1921, there were 768,238 cultivating owners and only 91,593 tenants.

The most important cause of a larger percentage of land being leased in Gujarat than in Deccan is the difficulty of getting labour. The Kanbi and Anavala cultivators, who at one time used to cultivate their fields, by means of hired labour, now let their lands to other cultivators, because they cannot get a sufficient supply of labour. In the village of Wadhvania in Bardoli Taluka of Surat district, I noticed that many of the cultivators who at one time cultivated their lands have now let part of them because their Dublas or permanent farm labourers have run away. In the village of Wadhwania, the Dubla population was reduced by 25 in the course of two years.

It is difficult to find out the exact area of land cultivated by the tenants in Gujarat. In the village of Ucchrel in Bardoli Taluka out of 627 acres of cultivated land 566 acres were cultivated by the cultivators, 59 acres were leased on a cash rent basis, and only 2 acres on a share basis. In Wadhwania, a village in the same Taluka, out of 1047 acres 49 gunthas[1] of land, 845 acres 29 gunthas were cultivated by the cultivators. 148 acres 29 gunthas were leased on a cash-rent basis, while 53 acres 21 gunthas were let on a share basis.

In the two villages of Bodal and Nisraya, in Kaira district, Borsad Taluka, I noticed that 50 per cent of land was let. In Bhadkad, of 3,309 bighas of land 1893 bighas

1 Guntha=1/40th of an acre.

are cultivated by the owners themselves, while 1416 bighas are let out for cultivation. 58 per cent of the Khatedars possessing 57 per cent of the land till their own fields, while nearly 43 per cent of the land, belonging to 42 per cent of the Khatedars is let.

Then again we have figures of the land held by the non-agriculturists. This land is generally sublet to the tenants. In 1916-17, 774,385 acres of land were held by non-agriculturists, in 1921-22, 933,542 acres were held by them while in 1926-27, 899,484 were held by them.[1] These figures refer to Ryotwari lands only. In Talukdari areas most of the land is let to tenants. This obviously means that in 1926-27, nearly 899,484 acres of land were sublet to tenants. Besides some of the agriculturists having holdings over 50 acres would also sublet their land.

It would not be, therefore, wrong to infer that over 1,000,000 acres are sublet or 30 per cent of the cultivated land in Ryotwari areas is sublet. For comparison I am quoting figures of holdings and area of land cultivated respectively by the owners and tenants in some of the European countries and Japan.

	Owners.		Tenants.[2]	
	p. c. of holdings.	p. c. of area.	p. c. of holdings.	p. c. of area.
Germany ...	.....	86·1	.....	13·9
Belgium ...	27·9	45·8	72·1	54·2
Denmark ...	89	90·3	11	9·7
France ...	70·7	52·8	29·3	47·2
England and Wales.	16·8	20	83·2	80
Japan ...	72·1	54·5	27·9	45·5

1. Land Revenue Administration reports of the Bombay Presidency.
2. Agricultural problems in their international aspect. Inter. Eco. Conf. Memorandum by International Inst. of Agriculture.

In 1927 out of the total number of 423,127 holdings 74,437 were held by non–agriculturists and were, therefore, let or about 18 p. c. of the total number of holdings must have been sublet. Some of the holdings over 50 acres must have been also let.

There is a tendency among the Pattidars to sublet their holdings rather than to cultivate them themselves. The difficulty of getting cheap labour results in larger and larger areas of land which at one time was cultivated by the help of hired labourers being let to the tenants. This results in the cultivation of land by an inferior class of cultivators.

It is also responsible for the creation of a class of absentee landlords in Gujarat who have no interest in the land except getting their rent. The most important problem in Gujarat, therefore, is to prevent such a state of things.

The crop sharing system is rather defective in Gujarat. The example of Italy here might be useful. In the commune of Cassino which I examined and throughout Central Italy the land is cultivated by Metayers. The metayers or the colones as they are called provide all the labour, while capital is provided by the owners. The proprietor provides the family of the colone with a house, implements and cattle. He pays the tax while the working expenses are shared by the proprietor and the metayers. As regards the relations between landlord and tenant two types of share tenancy may be distinguished: (1) that in which the land–owner takes no part in the cultivation of the land as being either unwilling or unable to farm it himself and puts it in the charge of a sharing tenant to whom he allows full liberty of action, so long as he hands over half of the produce. In this case the system of share tenancy becomes identical with letting to the peasant at a rent payable in kind and variable in quantity represented by that half of the produce that the tenant must give to the landowner. This form of metayage gives for the most part a poor result. At the other extreme there is the share tenancy in which the landowner keeps the management in his own hands. Most of the share tenancies in Italy belong to an intermediate type.

In Gujarat on the other hand the share tenancies belong to the first type. This kind of share tenancy is not beneficial to society. The tenants having very little capital and holding the land on a short lease do not cultivate the land with great efficiency. The tenants try to conceal a part of the produce and their relations with the landlord are anything but harmonious and on the whole the total output would have been much greater if the land were cultivated by the owner than under the system of tenancy on such a crop sharing system.

In case of cash tenancy, which is replacing the share tenancy in Gujarat, it works well as long as the tenant has got plenty of capital and a good deal of enterprise. In Gujarat the high price of cotton during recent years must have been responsible for the extension of the cash tenancy system at the expense of share tenancy.

The high price of cotton immediately after the war induced many cultivators to farm more land on a cash rent basis, but the subsequent drop in its price led many of them to abandon their farms and run away without paying their rents.

I think that in Gujarat the adoption of share tenancy, on the lines on which it works in Italy, would be beneficial. The metayers in Italy take up the land which their families can conveniently cultivate and which keeps all the members engaged throughout the year. As far as the owners are concerned they get some one to cultivate their lands. The metayers get the benefit of the capital of the owners. In Italy the crop sharing system has proved very successful. The typical crop sharing lease in Central Italy embodies the following principles.

Capital is provided by the owner of the land, labour by the tenant. Profits and products are shared as a rule in equal parts, subject in certain districts to special agreements for certain crops. Farming costs are likewise shared. The owner provides technical and administrative direction, and

also the live stock, implements and the house and pays the land tax and cost of land improvements.

In Gujarat, in the Surat district, cash tenancy is more common than share tenancy, but where the system of share-tenancy exists, the owner does nothing except pay the assessment. In parts of the Kaira district, the landlord takes half the produce including fodder, pays the whole assessment and the whole cost of manuring. There are cases where the landlord provides half the live stock. The crop-sharing system is not so carefully regulated as in Italy. In a country like India, where the tenants are poor, and where agriculture is more for subsistence than commerce, share-tenancy is more suitable if properly worked. In Gujarat, where the tendency is to grow more commercial crops, there is some advantage in the cash system, but with a fall in the price of these commodities which they grow for the market, tenants are bound to be very badly hit.

To get an idea of the crop-sharing system in Italy, I quote one example. In the commune of Cassino in the province of Frosinone there was a holding of 25 acres cultivated by a family of metayers consisting of five men and three women. The proprietor provided the family with a house and implements of the value of 8000 lire, a pair of bullocks, 3 cows, one horse and poultry. The working expenses were shared by the owner and the metayer. The produce of the farm consisted of,

40	quintals of wheat,
50	quintals of maize,
150	„ „ fodder crop,
4000	lire of vegetable produce.

Besides, there was the produce from the live stock which was divided equally between the owner and the metayer. The metayer's share consisted of,

6000	Lire Milk
600	„ Calves
1000	„ Eggs.

The total share of the metayer's family amounted to 15,000 Lire. The expenses consisted of seeds, manure and repair of implements. They were equally divided between the proprietor and the metayer, and they came to 1,200 Lire. The net return to the family of metayers, therefore, came to about 14,000 Lire, or about 1,800 rupees.

For comparison I quote the example of crop-sharing in the Kaira district of Gujarat in the village of Bodal, Borsad Taluka. There was a holding of 5 acres devoted to the cultivation of tabacco. The owner contributed 60 cart-loads of manure, the value of which would be 90 rupees. He also paid the assessment which was 30 rupees. The produce of tobacco from 5 acres came to 75 maunds or 525 rupees. The owner's net share came to Rs., 172 As., 8 while the tenants's expenses were 190 rupees and his net profit was only 72 rupees 8 annas.

The system of metayage or mezzadria exists very largely in Tuscany. I visited about 30 miles from Florence a " Fattoria " or estate owned by a big landed proprietor. It was 140 hectares in area, and was cultivated by 20 families of mezzadria consisting of 200 people. Each family took up a farm or " Poderi " of an average of 7 hectares. The proprietor provided the family with a house, the necessary working animals, a pair of bullocks, a horse and two cows, and all the implements. At the end of the year the produce was equally divided between the mezzadria and the proprietor. The direction was largely in the hands of a paid agent of the proprietor, who kept the accounts for the whole fattoria. Butter and wine were made on the estate itself.

The cash tenancy system, on the other hand, exists largely in Lombardy, where the farms are fairly large, ranging from 40 to over 200 hectares. The tenants are capitalist farmers. They go in largely for dairy farming and the cultivation of rice. The leases are generally for nine years, but the terms of contract can be revised every three years.

In Gujarat, owing to the operation of the Hindu Law of inheritance and the continuous pressure of population there is a tendency for the land to be sub-divided to excess. This tendency is noticeable throughout India and in many of the European countries where there are peasant proprietors. For example, in France, after the introduction of the Code Napoleon which insists on equal division of the property and which limits the parental power of testamentary disposition, the landed properties have become very small. The distribution of land holdings in France in 1908 was as follows—1):

	No. of holdings.	p. c. of total No.of holdings	p. c. of total area.
Holdings under 1 Hectare ...	20,87,851	38	25
Between 1 and 10	25,23,713	45·9	23·1
„ 10 and 40	7,45,862	13·6	29·6
„ 40 and 100... ...	1,08,453	2	12·4
Above 100	29,457	9·5	32·4

In France, however, the process of sub-division is checked to a certain extent by the fact that the French families are limited and the French peasants do not like their lands to be sub-divided. The French peasant is very frugal and tries to round off his small holding by buying the adjoining lands, if possible. In Germany land commissioners are appointed to create economic holdings out of large estates and to prevent sub-divisions of smaller holdings and bring about the consolidation of small farms into economic holdings. In Denmark also the tendency of the land legislation has been to create a class of small peasant proprietors and to diffuse ownership in land. There is a general tendency in European countries to create a system of peasant proprietorship. It has

(1) Memorandum submitted by the International Institute of Agriculture before the world Economic Conference 1927. Agricultural Problems in their international aspect pp. 346.

certain distinct advantages over large landlord estates but the great evil of peasant proprietorship is that the peasant holdings tend to become too small. In many Countris in Europe, the State by legislation attempts to prevent such minute and uneconomic sub-division.

In Germany, the law encourages the practice among peasants of succession to undivided properties by the creation of a preferred heir[1]. In Denmark, the law of 1906 forbade the reduction of the area of a peasant farm below a certain taxable value which is roughly estimated as from 25 to 125 acres but allowed these farms to be of four grades, a separate minimum being fixed for each grade. According to the new Act of 3, April 1925[2] no peasant farm as existing at the moment of the passing of the law may be extinguished or diminished in area without the sanction of the Ministry of Agriculture and no farm may be leased for a period exceeding five years, without the sanction of the Ministry of Agriculture.

Subdivision of lands is inevitable in all countries having a population of peasant proprietors. In Italy for example in 1912 there were 4,931,000 land-holders of whom 3,275,000 owned less than 2·5 acres, 614,000 from 2.5 acres to 4.9 acres 45,000 from 4.9 to 9·9 acres while 342,000 owned farms of from 12.4 to over 173 acres. The remaining 250,000 fatmers had farms above 173 acres. The figures clearly show the prevalence of exceedingly small free holds. I have seen farms with only the area of a few "are" in case of crops like vines or citrus fruits near Naples.

To have an idea of the minute sub-division of landed property in some parts of the Campania, I am quoting figures of the distribution of property in one of the communes. I obtained these figures from the School of Rural Economy at the Agricultural College of Portici, where an enquiry is being conducted into the distribution of small properties in Campania. In the commune of S. Martino Valle Gaudina—

1) Indian Journal of Economics, 1927, April, pp. 445 to 455.
2) International review of Agricultural Economic 1926, Jan.-March, page 54.

There were 10 holdings over 10 and under 50 hectares.

14	„	„	5	„	10	„
84	„	„	2	„	5	„
215	„	„	1	„	2	„
523	„	„	½	„	1	„
2319	„	of less tan ½ hectares.				

In the Commune of Cassino which I examined with the Director of Travelling Lecturers, I was given to understand that there were 4000 proprietors, while the total area was about 8000 hectares. Some of the properties must have been exceedingly small.

In North Italy in the plains of South Lombardy the holdings are generally medium-sized, varying from 50 to 200 hectares, but in the hills and mountain districts they are exceedingly small. In the South, on the coast lands, the holdings again tend to be very small. In Italy, however, there are big estates know as " Latifundia," in Sicily and in " Ager Romanus." Round about Brindisi I also saw big estates known as " Masserie," but on the whole there are more small peasant properties in Italy than big estates.

The question of preventing excessive sub-division is becoming as important in Italy to-day as in India, but upto now no compulsory legislative measure has been passed to remedy it.

In India this problem has become specially important in view of a Bill before the Bombay Legislative Council to prevent the-division of small holdings. The Bill has been largely based on similar measures in other countries. *

Professor Serpieri, the greatest authority on agrarian economics in Italy, rightly said when speaking at Bologna on 15th March 1924[1] that "primary importance should be attached to problems of production and not to those of distribution." Excessive sub-division is inevitable in peasant countries.

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* The bill has been subsequently abandoned.

1) International Review of Agricultural Economics, 1926 (Jan.-March.)

The important problem to be tackled in the case of these countries is to increase the output from the small properties. In Italy, therefore, they are concentrating more upon measures which might bring about increased production, and they have not yet thought it necessary to prevent excessive sub-division of holdings by legislation. A measure to prevent excessive sub-division is bound to be full of difficulties in India. It runs counter to the laws of inheritance and the attachment which peasants have for their small properties, no matter how uneconomic they are.

From a theoretical point of view it might be extremely desirable to have an "economic" holding for each cultivator. A measure to create such "economic holdings," however, bristles with difficulties. In the first place it is not easy to define adequately an "economic holding." An economic holding may mean a holding which yields an income sufficient to maintain a peasant and his family in a state of comfort. The size of such a holding would vary according to the nature of the soil, and whether there were irrigational facilities or not. It would also depend upon the skill of the cultivator. An economic holding may again mean a holding large enough to occupy a peasant's family working without any hired labour and with the help of a pair of bullocks. In Gujarat the size of such economic holdings would vary from place to place. In the case of garden lands near Surat, for example, a holding of $2\frac{1}{2}$ acres would be quite enough to maintain a peasant and his family in comfort. In Gujarat, however most of the holdings are Jirayat[1] and such holdings must have at least an area of 15–20 acres. To provide a holding of 15 to 20 acres for all cultivators or to prevent cultivators from cultivating a holding less than the minimum size which should be at least 15 acres would create good many difficulties. For the sake of illustration take the village of Bhadkad in Petlad Taluka of Baroda State. It has an occupied area ot 3,309 b:ghas[1]. The number of actual cultivators are 607, though the Khatedars are only 288.

1) Jirayat=dry.

1) Bigha=$\frac{2}{3}$ of an acre.

Of these 607 cultivators

387	cultivated	lands	between	1	and	5	bighas		
126	„	„	„	5	and	upto	10	bighas	
52	„	„	„	10	„	„	15	„	
21	„	„	„	15	„	„	20	„	
10	„	„	„	20	„	„	25	„	
7	„	„	„	25	„	„	30	„	
4	„	„	above	30	and	upto	50	bighas.	

If we look upon 20 bighas as an economic unit of cultivation only 21 cultivators out of 608 cultivators possess it. The position of all the Gujarat villages is similar. Any attempt to create economic units of cultivation will mean that a large number of cultivators who are now cultivating lands will be forced to become labourers.

We have no accurate information about the units of cultivation cultivated by cultivators in Gujarat. If we look however at the holdings of Gujarat we find that the largest percentage of holdings are between one and 5 acres.

In Gujarat the average size of a holding is about 8 acres. According to the report of land revenue administration of 1926–27, there were 4,23,127 holdings, out of this total number 275,341 were under 5 acres or approximately over 60 p. c. were under 5 acres and 90 p. c. were below 25 acres. This was the exact position of the Gujarat holdings in 1926–27.

	Upto 5 acres.	5 to 15 acres.	15 to 25 acres.	25 to 100 acres.	100 to 500 acres.	Over 500.
Ahmedabad.	42,161	23,142	6,921	5,316	448	57
Kaira ...	125,149	30,367	4,971	2,626	231	37
Panchmahal.	19,340	15,264	3,105	1,359	103	3
Broach ..	24,636	13,450	4,756	5,292	498	15
Surat ...	64,055	19,764	5,344	4,282	425	10
	275,341	101 987	25,097	18,875	1,705	122

From the whole of Gujarat, the distribution of holdings and the area occupied by each class of holdings is as follows :—

	Number of holdings.	p c. of the total number of holdings.	Area.	p. c. of the total area.
Upto 5	275,341	65·5	593,400	17·8
Over 5 upto 15.	101,987	23·7	870,243	27·2
Over 15 upto 25.	26,097	5·9	468,130	14·4
Over 25 upto 100.	18,875	4·4	852,846	26·7
Over 100 upto 500.	1,705	·4	301,384	9·1
Over 500	122		156,535	4·8
	423,127			

The average size of holdings in each of the Gujarat districts is

Ahmedabad	12·16
Kaira	4·9
Panchmahal	8·3
Broach	12
Surat	6·3

To create economic holdings and to have economic units of cultivation in Gujarat is, therefore, a task which is extremely difficult. We have no proper data of the number of cultivators in Gujarat. According to the census report there are 398,214 cultivators but I am inclined to believe that there are more. To give each of these cultivators an economic unit of cultivation is impossible unless more land is brought into cultivation. In Gujarat however, almost all the land available for cultivation is already occupied. The only result of any attempt to create economic units of cultivation would be therefore, to create a class of landless labourers, which is

highly undesirable. There are not many industries in Gujarat to absorb the surplus population which would be forced to abandon the land. The right solution would be to create opportunities for the rural population to supplement their limited income from land.

In the Commune of Cassino in Italy we saw that there were only 8000 hectares of cultivable land. The area of land considered necessary to support a peasant's family is eight hectares. There were however a large number of properties which were much below 8 hectares. The owners of these properties must have some subsidiary source of income. They would either farm more land or work as labourers. The same thing happens in Gujarat to-day.

Excessive subdivision is an evil, but it is difficult to avoid it except by limitation of population an in France.

There is however another evil from which the agriculture in Gujarat suffers and that is fragmentation of holdings. Keatinge[1] has given several illustrations to show the fragmentation of holdings in Bombay Presidency.

A khatedar does not possess a compact holding but his holding consists of several scattered plots. For example in the village of Wadhawania which I visited, there was a khatedar by the name of Khusal Parbhu. He had a holding of 35 acres 3 gunthas which was divided into 15 plots, the two largest being 10 acres and 28 gunthas and 5 acres and 12 gunthas. The majority of the plots were below 1 acre. In the same village there was another holding of 6 acres and 14 gunthas owned by Amidas Rama which was made up of 4 Plots.

This fragmentation is due, as Keatinge has pointed out, to the desire on the part of all the heirs to have a share from all the plots owned by the deceased. If the father dies leaving 3 plots of 9 acres each among three sons, instead of each son having a compact plot of 9 acres, he will have three plots of

(1) Keatinge. Agricultural progress in Western India. Pages 195-223 Appendix I.

three acres. In some cases there is a justification for such a division. The soils may vary or one plot may be Jirayat and another may be Kyari and the third may have irrigation facilities. On the whole, however, there is no defence for such minute fragmentation as one finds in many Gujarat villages. In most of the European countries there has been legislation to restrain such scattering of the plots. In Switzerland article 703 of the Swiss Civil Code recognises compulsory re-striping and the Council of State can officially order re-striping in the case of any Commune or region of 10 hectares where the average extent of the parcels in such Communes is less than 500 sq. metres. The earlier law of 1902 laid down that re-striping could be brought about if the majority of the land holders or those owning more than half the land in a particular area are in favour of it.

The results of these measures have been encouraging in Germany and Switzerland as the following figures show:—

Work of Consolidation in Germany between 1878 and 1898.

	Total area consolidated. Hectares.	Percentage of the total surface.	Number of Parcels.		Size of Parcels. Hectares.	
			Before.	After.	Before.	After.
East Prussia.	34,325	1·25	17,372	7,839	1·90	4·39
West Prussia.	18,515	1·01	7,413	2,048	2·50	9·25
Brandenburg.	30,497	1·25	29,968	9,718	1·02	3·14

In Switzerland in the Canton of Aargau 3944 hectares of land were consolidated or 4.8% of the total surface of the cultivated land in the canton, and there was reduction of 26% in the total number of parcels. 1

In France the "Morcellement" of land was going from bad to worse. No effective measures was taken till 1918.

1) Tassinari "Frazione recompozione di proprieta fondaria.

On 27th November 1918 a law was passed known as the "Loi Chauveau" which permitted the formation of Syndical associations for re-striping. It requires the consent of 2/3 of the the land holders holding more than ½ the land or land holders holding more than two thirds of the land. In France the law till 1921 had very little effect 1). A similar measure was adopted in the Baroda State but it has no result. On the other hand in the Punjab and Baroda they are now relying more on co-operative methods than compulsory legislation and they have succeeeded though the progress is very slow.

I visited some of the Baroda villages where consolidation has been brought about by co-operative societies. Just near Baroda in the village of Sokhda there were 56 holdings and 296 survey numbers and 227 plots before the work of re-striping was started. Now there are only 160 plots. There are two other villages near Baroda where the work of re-striping is proceeding. The following extract from the Moral and Material Progress of India 1925–26 will give one an idea of the work done by the co-operative societies in bringing about the consolidation of holdings in the Punjab. "In three years 133 consolidation societies have been formed with 500 members and 35,000 scattered parcels of land have been consolidated into 4,500. The area thus re-striped to the end of the year 1925 was about 50,000 acres. Large areas which were formerly uncultivated owing to excessive fragmentation have been brought under the plough. The general effect of consolidation is to increase the product of land, stimulate the desire for improvement, increase rent and decrease litigation and quarrels. In several villages, wells have been sunk to irrigate land previously too split up to be worth the expenditure. In one Jullunder village, an owner who had his land scattered in 200 different fields now has it in one, and five more have single plots where before each had over 100."

This fragmentation of holdings is a great obstacle to efficient cultivation. When the plots become excessively small, it is awkward even to use the existing primitive imple-

1) Auge Laribe-Le paysan Francais après la guerre pp. 248–249.

ments. The use of improved implements is out of the question. It discourages the sinking of wells. It results in dissipation of the cultivator's energies. The cultivator has to go from one field to another with his implements, bullocks and plough. There is a waste of land in enclosing the fields and setting up boundary marks. It is difficult to manure all the fields properly. The fields nearest the village are properly manured, while those situated at a distance are neglected. It is difficult to watch the crops in the case of such scattered plots. It leads to litigation between neighbours.

Mr. Piret[1] calculated the increase in expense due to the distance of 1 kilometre between any two plots at 10 francs per hectare, because of the loss of time in transport and manual labour. Pohl[2] calculated the increase in expenses in Germany due to the scattering of plots as follows :—

Manual labour	5·3%
Transport of manure and produce...	15–35%

No attempt has been made to calculate increased expenditure in India, but from enquiries of the peasants in Gujarat villages, I calculated the increase in expenditure due to the distance of 1 mile between two plots at 6 to 8 as. per acre, because of the loss of time in transporting manure, produce and watching.

On the other hand, if the full advantage from a consolidation of holdings is to be reaped, the cultivators must live on their farms. This, however, would result in the disintegration of village life. The nucleated village has certain social advantages., which more than make up for its economic disadvantages. In Southern Italy, I noticed cultivators going two miles from their villages every morning to cultivate their fields. They preferred to remain in the village to staying on their farms. The cultivators believe that there is greater security in living in the villages and that there are more social amenities.

1) Essai sur l'organisation des Entreprises Agricoles, p. 24.
2) Poisson. Du Remembrement de la Propriete Fonciere dans les Pays Germanioues.

Before I close this chapter, I will refer to the measure before the Bombay Legislative Council. It is a measure which aims at the prevention of excessive subdivision and also at bringing about consolidation of holdings.

It respects the rights of existing holders of small uneconomic holdings but tries to prevent the further subdivision in future. It also creates a machinery for bringing about consolidation and makes it compulsory where 2/3 of the holders, owning more than ½ the land are in favour of it. For each district, the size of the economic holding is to be determined and notice given to all the holders whose lands are below this standard size and their holdings are to be registered as fragmented holdings. These fragmented holdings may not be leased except to one who is cultivating a contiguous plot of land. If sold they are to be sold preferably to a neighbouring holder, preference to be given to one whose holding is fragmented. Any other alienation is to be declared, void, unless no neighbours are forthcoming to buy. Economic holdings may not be subdivided, if by process of division, fragmented holdings are created. In case of holdings which become fragmented, after a certain day to be notified, they are to be called newly fragmented holdings and they cannot even be cultivated by the owners. The Governor in Council shall appoint for each district a committee consisting of the Collector, who would act as a chairman, a Deputy Director of Agriculture, and three members of the district local board. The committee shall determine, for the whole or part of the district and for each class of soil, the minimum extent that can be profitably cultivated. An entry shall be made in the record of right, in case of every plot of land less in extent than the standard unit, that it is a fragmented holding. A notice shall be given to all the holders of the fragmented holdings. These fragmented holdings may not be sold or exchanged, or mortagaged with possession, or leased or transferred, except under certain conditions In case of transfer or sale of such fragmented holdings, the neighbours shall have the right of pre-emption. The transferor can dispose of his hold-

ing among his neighbours as he thinks fit, but priority shall be given to the neighbour whose original holding, being less than the standard unit, shall when combined with the fragmented holding become equal to it or exceed it. In case of no neighbours claiming the right of pre-emption, the holding can be disposed of by the owner as he likes.

In case of partition of the land, the Collector shall so divide the land as not to leave any fragmented holding or create a new fragmented holding. All the heirs, if possible, shall be given land equal to that of the standard unit and failing this, as many heirs shall be given land as can be accommodated with standard units. The rest shall be given cash equivalents. The Government will advance Tagavi loans for buying such "fragmented holdings" to cultivators who want to round off their holding. All documents relating to the lease or transfer of a fragmented holding or of a new fragmented holding made in accordance with the provisions of the Act shall be exempt from stamp duty and registration fees.

The bill also provides for consolidation of holdings where two thirds of the holders of plots and not less than half of the owners of the land in the area affected consent to the making of a consolidation scheme. When the consolidation scheme has been accepted the Government will appoint a consolidation officer. He shall be assisted by three men from the village. In case of any disagreement with the decision of the consolidation officer, the dispute must be referred to a tribunal of arbitration. After the valuation of all existing rights the redistribution shall be so arranged that the original holders will get back compact blocks of land of equivalent value as far as possible containing due proportion of Jirayat and Bagayat land. The redistribution scheme shall provide for roads, tanks, rights of way, water courses and such other conveniences in such a way as to ensure that the reconstructed plots shall be cultivable to the greatest advantage.

The proposed legislation to stop the subdivision of holdings in India has been subjected to a good deal of criticism

by many on the ground that they would deprive many people who are making a living out of the land, of the means of occupation. There are very few industries in India. In Gujarat some of the men thrown out of the land may be absorbed in the textile industries but these cannot absorb a very large number. All these measures will create a class of unemployed people like those brought into existence in England immediately after the agrarian revolution and the enclosure movement of the eighteenth century. There is a considerable amount of truth in these criticisms. Owing to lack of industries and absence of diversity of occupations, any measure that would suddenly deprive a large part of the population of the right to cultivate its land must only be adopted after very mature reflection.

The agricultural backwardness of Gujarat, compared with the European countries, is not mainly due to the subdivision of holdings. In Belgium the majority of holdings are very small, and even in Denmark some of the holdings are small-sized, but by intensive cultivation and the help of dairy-farming the cultivators are able to make a decent living out of them. In Gujarat the methods of extensive cultivation are followed on small holdings, while dairy farming, which in the long run would turn out to be extremely lucrative, is neglected.

Agricultural Technique in Gujarat.

There has been no radical transformation of agricultural technique in Gujarat like one which took place in England at the close of the 18th century. The Gujarat cultivator today is following the same agricultural methods which his forefathers practised several hundred years ago.

As far as the technique of agriculture is concerned, his knowledge is derived more or less from the store house of collected experience of his ancestors. There is no conscious effort on his part of trial and experiments to improve his inherited knowledge. Indian agriculture is empirical and unscientific.

It has often been remarked that in Gujarat, the cultivator uses very primitive implements. Experiments have been made from time to time to introduce improved implements from the West, but they have all been unsuccessful.[1] It must be borne in mind that the cultivator in Gujarat has a very small holding which cannot stand the expense of costly implements. These implements are sometimes too heavy for his bullocks. Instead of trying to introduce wholesale foreign implements, it would be much better to modify and improve upon the existing implements. In Bombay presidency a firm by the name Kirloskar Bros. is trying to manufacture and import machinery which can be profitably used by the Indian ryots.[2] The iron plough is gradually displacing in the Deccan the old wooden plough. Tractors are getting more and more popular in Gujarat and sometimes steamploughs are let by the agricultural department to cultivators in Gujarat.[3] In case of foreign imported implements there is a further difficulty of getting them repaired in villages when they go out of order. In the village of Wadhwania there was one Khatedar who had a water pump but he was not able to make use of it because something had gone wrong with it and no one in the village knew how to set it right. There was also one tractor in the same village and I was told that the same difficulty arises when it goes out of order. The implements and tools which an ordinary farmer uses in Gujarat are simple in construction. They are made of Baval wood by the ordinary village carpenter and can easily be repaired at a small cost. The most common and generally used implements are[4] :—

1. Hal, a light plough used generally during the monsoon. It does not plough very deep and it is generally said about it that it merely scratches the ground. During the monsoon on wet ground it forms an arrow-shaped furrrow varying from five to seven inches in depth. 2. Nagar, a heavy plough used in planting canes in South Gujarat. 3. Karab or Ramp, a

1. Mc Kenna's Indian Agriculture.
2. Evidence before the Royal Agriculturai Commission, 1925-27.
3. Reports of the Bombay Agricultural department.
4. J. Molleson's text book on Indian agriculture.

harrow with horizontal blade 30 inches to 40 inches in length used in summer on black soils and in the monsoon on all soils for preparatory tillage. 4. Dantal, a harrow (six wooden coultered) used in hoeing Kodra as well as in stirring after ploughing. 5. Ghanio used in puddling in kiaris in the Navsari district. 6. Seed drill used in sowing seeds. It goes under different names in different tracts of Gujarat; Fadko (two coultered) in Navsari, Tarfen (three coultered) and Chawal (four coultered) in other parts of Gujarat. There are holes in the coulters on which are placed bamboo tubes which support the seed bowl. The seed bowl is called Orani and is a bamboo tube tied with a leather strap to the (Hal) plough for sowing castor, ground-nut and such other large seeds. Rampadi or Karabdi (bullock hoe) is similar to Karab (blade harrow) but differs from it in size. It is made of various size to suit different crops, such as cereals, tobacco etc. It stirs the surface and destroys the weeds.

Samar (levelling board) is used in covering seeds as well as in levelling the soil after ploughing.

The tools which are in general use are (a) Datardu, sickle used in harvesting and cutting grass, (b) Khurpi used in weeding, (c) Kodali (spade), (d) Pavado (shovel) are used for digging, (e) Dantali (rake) used in stirring while threshing, (f) Kuhadi (axe) used in cutting wood, (g) Khori (rake) used for spreading manure, (h) Jinsli (three or four toothed) used in lining for planting tobacco and chillies in squares.

In Gujarat as in the rest of India labour is neither expensive nor scarce. Most of the cultivators are helped by the members of their families. As long as cheap labour is available there is no incentive to economise labour and using more expensive tools and implements. And yet the growth of textile industry in Bombay and Ahmedabad and the attraction of these cities which afford a wider scope for employment has resulted in some shortage of labour and complaints

1. G. H. Desai's Evidence before the Royal Commission on Agriculture Vol. II.

are often heard that labour is becoming very scarce and expensive. In consequence oil engines and pumps are used in place of bullock lifts for well irrigation. It is quite possible that expensive machinery may slowly supersede the older implements as has happened in Italy and France during the last thirty years.

For the successful introduction of these implements however manufacturers must study the local conditions, the nature of the soil and the requirements of their customers. Implements specially designed to meet the local demand would certainly be very useful.

The advantage of improved implements must be demonstrated to the farmers. Agricultural shows should be held more frequently at different places where the cultivators can see the working of these implements. In Baroda, since 1914 moving Agricultural Demonstrations are held from time to time. A railway wagon is hired at concession rates and it is detached at important stations on the line. The wagon is loaded with implements and seeds and lectures are given at various stations where the wagon is detached. The use of improved implements is demonstrated. The cultivators of the neighbouring villages are given information of these travelling exhibitions. Extra implements such as Meston, Hindustan and other ploughs are kept in stock and sold on the spot. [1]

Agricultural propaganda.

Ever since the establishment of agricultural departments in the various provinces of India, these departments have been making experiments on their experimental farms and have been trying to evolve new varieties of crops with higher yields or with greater power of resistence against diseases. Most of the work, which the Famine Commission of 1901 expected these departments to do, has been accomplished by them. [2] Improved agricultural training to the better classes, the promotion of mutual associations, agricultural research and

1. G. H. Desai's Evidence before the Royal Com. Vol. II.
2. Indian Famine Commission cmd 876 of 1901.

experiment, enquiries regarding tillage and manure, investigation of crop diseases and their remedies and the provision of improved seeds, the experimental introduction of new staples, the improvement of cattle-breeding and the investigation of cattle diseases and such other allied matters have been receiving the careful attention of the agricultural department.

The Bombay agricultural department has rendered very useful services in improving the variety of cotton grown in the presidency. The introduction of the new variety of 1027 AF in South Gujarat has been responsible for the prosperity of the Surat district, while in the North Gujarat, the introduction of groundnut has been a source of great benefit to the cultivators. Recently the department has been trying to introduce an improved method of tillage known as "ridge cultivation" in South Gujarat. In this area the limiting factor both in the yield of Juwar and cotton appears to be the water-logging which takes place each year during July when the crops are grown on the flat. By growing the crops on high ridges, this is avoided and the result in 1921-22 was an increase in yield from 55 to 60 p.c. [1]

The important task, however, is that of making the cultivators acquainted with the work of agricultural department and in inducing them to adopt the methods of the agricultural department. It is here that Gujarat has something to learn from Italy. There are two institutions in Italy, the "Cattedre Ambulanti Agricultura" and the "Consorzi Agrari" which do useful propaganda work to acquaint the cultivators with the researches made by technical experts and to induce the cultivators to adopt methods which have proved successful. They have proved useful agents in the distribution of better varieties of seeds and the supply of manures and machinery to the cultivators. What is wanted in Gujarat is some kind of body which can come directly into touch with the cultivators and make them acquainted with the work done by research institutes and agricultural departments. There should be bodies which could give cultivators improved types of machinery and supply them with fertilizers if necessary.

1. Report of Bombay Agricultural department 1922-23.

In Italy the work of agricultural propaganda has been largely done by the "Cattedra Ambulanti". The Cattedre Ambulanti were first started owing to local demand for them and owing to the local enthusiasm. They had very limited resources in the beginning. The Italian State has now made them the pivot of its agricultural propaganda and a large sum is contributed by the State for the maintenance of these chairs and their number is largely increased. The number of travelling lecturers has gone up from 180 in 1905 to 843 in 1927 and the money spent on these bodies has gone up from a little under 1 millon lire to 24 millon lire.

There is one chair for each province and there are several sections attached to each chair. In short there is one man for every 50,000 inhabitants and 85,000 acres who is directly occupied in the work of agricultural propaganda. The work of the "Cattedre Ambulanti" is to spread agricultural education amongst the cultivators and to encourage in all its branches the progress of agriculture. They are to spread amongst the cultivators more advanced agricultural methods and scientific agriculture, by conference, temporary courses, publications and practical demonstrations. They are supposed to spread the use of better implements and do everything possible in collaboration with other institutions to improve the conditions of agricultural areas. It is due to their activities that Italian agriculture has improved as the following figures will show.

Annual average yield per hectare.

	1889	1901–03	1923–26
Wheat quintals	7·9	9·9	12·3
Oats „	6·1	7·1	12·1
Maize „	11·3	13·4	17·5
Rice „	29	25·1	43·6
Potatoes „	58·5	39	59

The annual consumption of chemical manures went up from over 3 million quintals to 14 million quintals from 1900 to 1923–26. The use of machinery and sowing and reaping machines has considerably increased. The growth of agrarian consortiums has also been largely due to the activities of 'Cattedra Ambulanti'. The Cattedra Ambulanti have introduced more rational rotation of crops and have done their best to encourage irrigation.

On the other hand 'Agricultural Consortiums' have done equally good work in advancing the state of Italian agriculture. The first consortium was started at Piacenza in 1892.

There has been a considerable progress since then. The main function of those bodies is to purchase agricultural requisites and to supply them to their members. Every district has a consortium, though the recent tendency is to have one consortium for one province. Their functions have become much wider to-day. Their number is much greater in the North than in the South of Italy. In North Italy there are 418 such societies as against 205 and 210 in Central and South Italy. These consortiums have now their own factories for manufacturing superphosphates and copper sulphates. They manufacture agricultural machinery. The separate consortiums have combined into a federation. The Council of Administration of the federation consists of the representatives of the affiliated societies. The progress which the federation has made will be seen by the following figures.

	Number of affiliated societies.	Capital.	Value of merchandise sold.
1893	65	12,985	711,147
1903	364	111,196	5,374,632
1913	713	261,860	21,444,179
1923	954	2,411,675	268,405,103

In 1923 the total number of members of all affiliated societies was 5,00,000 cultivators and their combined capital was 80,000,000 lire and they sold fertilizers, machinery and other agricultural requisites of the value of 975,000,000 lire. The consortiums undertake also agricultural improvement work, and take up the direct exploitation of agricultural machines. They give information about marketing conditions to agriculturists and they have their own laboratories and experimental farms.

In Gujarat there has been very little progress in agriculture because of the absence of any effective machinery to spread more advanced methods of agriculture and to acquaint the cultivators with the work done by the agricultural department. There is no body which comes directly in touch with the cultivators and which can teach them and show them the benefits of successful experiments carried out by agricultural departments. There are two district overseers for each district. They can hardly come into direct touch with the cultivators residing in such a big area. Sir Chunilal Mehta recently made attempts to start Taluka development associations. There is a great future for these bodies if they can raise sufficient money, and if they can get the right type of man. In peasant countries it is always difficult to get the right kind of leader.

An attempt was made to bring about co-operation between the agricultural and co-operative departments by the establishment of divisional boards in each division consisting of a Deputy Director of Agriculture, Assistant Registrar of Co-operative Societies and four non-officials. Agricultural organisers were also appointed in each district.

If Indian agriculture is to advance, it must produce rural leaders and it must have bodies which will bring before the notice of cultivators the results of scientists and experiments made by technical experts.

Agricultural capital.

One of the most prominent cause of the backwardness of Indian agriculture is lack of capital. In Gujarat the

cultivators are heavily indebted. There are some people who look upon the chronic indebtedness of the cultivators as an indication of the morbid condition of the rural economy of Gujarat. The indebtedness of the peasantry of Gujarat is neither exceptional nor abnormal. It is the characteristic of the agricultural life everywhere. Sir F. A. Nicholson says at the beginning of his invaluable report upon land and agricultural banks : 'The lesson of universal history from Rome to Scotland is, that an essential feature of agriculture is credit. Neither the conditions of the country, nor the nature of the land tenures, nor the position of the agriculturists affects the one great fact that agriculturists must borrow. The necessary complement, in fact, of the peasant proprietor is the money lender."

The land of all civilised countries is being mortgaged. A score of years ago the mortgage debt in the United States was 35·5 p.c. of the taxable value of the land. In France, it was 25 p.c. In Prussia, rural property was mortgaged upto nearly 40 p.c. of its value. In the U.S. 28·7 p.c. of the farms were mortgaged in 1890. In 1910 the proportion had risen to 36·8*. I cannot help but quote Sir F. Nicholson again from his invaluable report upon the indebtedness of the cultivators in Europe. These figures apply to conditions of things which obtained 40 years ago. Yet they give us an idea of rural indebtedness in Europe. There is very little reason to believe that the burden of indebtedness has in any way decreased. " In France, the total mortgage debt, to-day irrespective of all debts based upon personal and chattel credit, for purchases on credit of cattle, stock and farm necessaries or for family maintenance is known to be about £ 660,000,000.

For Austria no complete data are available, but only in a portion of Austria the mortgage debt, in 1888 was £160,000,000 on peasant holdings alone. In Prussia alone the registered mortgage debts in 1894 amounted to £ 500,000,000. In 1893 a discussion in the Storthing of Norway gave a most instructive account of Norwegian peasant indebtedness. It

*Herrick's- Rural Credit.

was declared that the landholders were getting deeper and deeper into debt, that the mortgage debts had risen from £9,000,000 in 1865 to £27,800,000 in 1893. For Italy the figures are very heavy. On January 1st 1888, the registered mortgage debt was about £328,000,000.

In Gujarat and in India as a whole it is not indebtedness which is the great obstacle to agricultural improvement but the fact that the capital is only available at a rate of interest which makes its investment unprofitable. After all capital is used in all industries because it helps production and considerably augments its volume. If, however, the charge for the use of capital is too heavy in proportion to the addition to the produce which it gives, it does not pay any one to use it. This is exactly the position of the Gujarat cultivator. The average rate of interest charged by the money lender to land owners in Gujarat varies from 9½ p.c. to 18 p.c. and for tenant cultivators the rate is higher than 20 p. c. There are cases where the rate of interest has been recorded to be as high as 100 p. c. Few industries under such conditions can succeed. Apart from the prohibitive rate of interest, the borrowings in Gujarat are very largely for unproductive purposes. There is nothing wrong in the use of credit and within certain limits, it is very commendable. Small proprietors have very little capital of their own and they cannot afford to wait during the time which intervenes between the sowing operations and the harvest. They must borrow in order to live before they are able to obtain money by selling their produce. They may need capital for buying seeds, implements or cattle. The borrowings of Indian peasants are however not confined to such productive purposes. Facile credit, used for unproductive purposes is particularly to be guarded against in India. Credit has been abused in Gujarat and the peasants' debts largely represent unproductive borrowing. I have examined very carefully the extent and the causes of indebtedness of the cultivators of a small village called Bhadkad in the Petlad Taluka of Baroda district. There were 356 families out of which 254 were indebted to an extent of Rs. 73,046. Out of this total debt Rs. 49,691 were

borrowed on personal security, Rs. 2,201 on the mortgage of houses, Rs. 13,235 on the mortgages of land Rs. 3,030 on the security of ornaments.

On enquiry into the causes of indebtedness it was found that Rs. 4,640 were borrowed for buying land, Rs. 3,219 for paying land revenue, Rs. 9,823 for household expenditure, Rs. 7,105 for buying cattle, Rs. 15,400 for marriages and Rs. 4,331 for ceremonies connected with death and Rs. 7,725 for miscellaneous purposes. This accounted only for the debt of Rs. 52,234, No explanation was given for the remaining debt of a little over Rs. 20,000. If we look at the causes of indebtedness we find that 37 p. c. of the total debt was due to social customs and social obligations while 14 p. c. of the debt was contracted for buying cattle, 9. p. c. for buying land, 19 p. c. for household expenditure and only 6 p. c. for paying land revenue.

Unfortunately no statistics are available for the total indebtedness of Gujarat cultivators. We know something about rural indebtedness in Punjab, from the pages of Darling's interesting study. Dr. Mann has examined two representative villages in the Deccan and he gives us some idea of rural indebtedness there. Mr. Jack in his study of Faridpur district has given us a very good picture of general indebtedness amongst all the classes of that district. In Gujarat we have some statistics for the Baroda State. In 1901 His Highness the Gaekwar of Baroda ordered a census to be baken of the indebtedness of the agriculturists in the State. The returns showed that out of 2,53,734 khatedars 1,57,722 or 60 p. c. were indebted to the extent of Rs. 7,57,17,190 or Rs. 460 per head. The details show that the Baroda district khatedar was on an average indebted to the extent of Rs. 620, the Navsari khatedar to the extent of Rs. 469, the Kadi one to Rs. 428 and the Amreli one to Rs. 313. A curious fact in this connection was that the indebtedness by districts was in the same proportion as the value of the land in the districts.

In 1913 a report on the agricultural indebtedness in the Baroda State was prepared. From this report we learn that

the indebtedness has in no way diminished. The estimate was little more than pure conjecture, though based on certain available data, and it came to Rs. 8,06,44,520, or little more than in 1901. The percentage of cultivators actually indebted was more than in 1901. The average debt per khatedar came to Rs. 450[1]. The Economic Inquiry Committee appointed in Baroda in 1918–19 calculated the agricultural indebtedness at Rs. 8,03,55,516—a slight decrease from 1913. But the margin of probable error is greater than the variations in the figures.

As far as British Gujarat is concerned, we must rely on pure inference as long as detailed statistics are not available. In the revision settlement report of Bardoli taluka in 1890, it was stated by Sir Frederick Lely, the Collector of Surat at that time, that the total debt of Bardoli taluka according to the estimation of the Mamlatdar was Rs. 33,76,000.

There were 17,000 cultivators and if 60 p.c. of them were in debt the average debt of the cultivator would amount to Rs. 300. This, according to Sir F. Lely, was an overcautious estimate. He thought that the indebtedness was much heavier than that. "The figures were under rather than over the mark". The Famine Commission of 1902 says that "The Deccan Riots Commission of 1876 found that about 1/3 of the occupants of government land are embarrassed with debt and that these debts average about 18 time their assessment and that nearly two thirds of the debt is secured by mortgage of the land. In his evidence before us the Chief Secretary to the Bombay Government said that 28 p.c. of the land in Broach had passed into the possession of money lending classes and from the report of the Collector of Ahmedabad, it appears that in his district expropriation of the old owners has made considerable way. Taking all these circumstances into account and comparing them with the evidence we have recorded, we think it probable that at least one-fourth of the cultivators in Bombay Presidency have lost possession of their land and less than fifth are free from debt and the remainder are indebted to a greater or less extent." The

1. Baroda Economic Enquiry Committee Report.

total number of cultivators in Gujarat is 400,000 and if we assume that the rest of Gujarat is indebted to the same extent as the taluka of Bardoli[1] and that 60 p.c. of the cultivators are in debt, the total volume of indebtedness in Gujarat would be Rs. 7,20,000. If we assume on the other hand that the indebtedness in Gujarat is quite as heavy as in Baroda, the total volume of debt would be about 10 crores. The Deccan Riots Commission estimated the total debt as eighteen times the assessment.[2] If we calculate on that basis, the total volume of debt in Gujarat would be about 18 crores of rupees. Mr. Darling from his Panjab experience thinks that the total debt represents 12 times the land revenue.* In case of Gujarat therefore, it would work out at about 12 crores of rupees. This, in itself, is not a very big figure compared to the rural indebtedness of European countries or that in the United States. The difference between the debt in India and that in Europe lies in the fact that in India money is borrowed by the peasants at a rate of interest which averages much over 12 p.c. while in Europe or the United States, it would be about 6 p.c. In Europe most of this debt is for productive purposes, while in India money is very largely borrowed for expenditure on ceremonies connected with marriage or death or on social conventions. To quote again from the revision settlement report of Bardoli taluka

Amount spent by a Leva Kanbi 30 or 40 years ago.		Amount spent now.	
Marriage.	Death.	Marriage.	Death.
1st class 500.	500	1000	1000
2nd class 400.	200	800	800

1. Revision settlement report of Bardoli taluka.
2. Famine Commission Report.

* Darling:—The Punjab peasant in prosperity and debt.

"These figures specially relate to the Kanbis, but in all castes from the Anavala Brahman down to the Kali paraj, the expenditure has more than doubled. It is no uncommon thing for Anavala Brahman now to spend Rs. 2,000 over a marriage. Not only do they spend more money on ceremonies, but the present men, as they live less laborious lives, they have more expensive taste than their forbears and to gratify them, will resort to the Sawkars if there is no money in the house. Formerly the ordinary cultivators, to a man wore country cloth, now they must have it of a finer texture. Cheap local rice, Dal and Gur were enough for the daily food, now vegetables, imported rice and refined sugar are in demand. A more luxurious generation seeks after Pan Supari, chiroots, hired servants, sweetmeats and American watches and will borrow money to get them."

In the census report of the Bombay Presidency for the year 1921, interesting figures have been collected showing the expenditure amongst the various classes in the presidency on the occasion of marriage, death or other minor ceremonies like the birth of the first child. The figures vary from 300 to over 10,000 rupees. The heavy expenditure on such ceremonies goes a long way in swelling the debt of the Indian cultivators.

It has some time been contended that indebtedness is not necessarily a sign of poverty. In order to get credit one must be credit worthy. No one would lend money to a person who has no sound security to offer. Mr. Darling has shown that debt always follows credit and that the proprietors are always more heavily indebted in the sense that the absolute amounts of their debts are greater than the small land holders and the small land holders more than the tenants. In Punjab he found, the average debt amongst the various classes of cultivators as follows :—

	Average debt.
Large proprietors	Rs. 570 per head.
Small proprietors	„ 310
Occupancy tenants	„ 290
Tenants at will	„ 136

"The large proprietors borrow more than the small and the proprietor more than the tenant. The tenant at will and the farm servant borrow little because they have little security to offer." It is commonly observed says the Famine Commission of 1879 that the land holders are more indebted than the tenants with occupancy rights and tenants with rights more than tenants at will. Mr. Jack in his enquiry of Faridpur district found that nearly half the debt of the district had been incurred by comfortable cultivators, and 48 p. c. of the poorest classes had no debt at all. The existence of debt alone would not be a clear indication of the poverty of cultivators in Gujarat. What Mr. Darling says would be true under normal circumstances but it must be borne in mind that in India the bulk of the debt is unproductive. The increase in the volume of this debt would therefore impoverish the agriculturists. It must also be remembered, that in Gujarat and in the rest of India the money lender lends money not so much on the strength of the security of the land but rather on the attachment of the cultivator to his land. The money lender knows that the cultivator will not abandon the land, but stick to it even as a tenant and allow himself to be rack rented. The money lender does not covet merely the land of the cultivator but what he wants is the land and the tenant whom he can rack rent. It obviously therefore follows that it would be nothing short of mockery to say that the cultivator is more prosperous because he is able to borrow more money. Whether his debt is nominally large or small his position is the same if he is completely in the clutches of the Sowkar. To the Sowkar there is no other mode of investment which is more paying. Sir T. Hope in connection with discussion of the Deccan Agriculturists Relief Act observed :—

" The money lender prefers to keep the ryot on the land and extract all he can from him, the punctual discharge of his advance is the last thing he desires. The occupier is reduced by the pressure of debt, to a tenant at will holding at a rackrent from and sweated by his Marwadi creditor."

Darling's the Panjab peasant in prosperity and debt. Jack's Economic life of a Bengal district.

The underlying causes of rural indebtedness in India are the backward condition of the agricultural industry itself, the fragmentation of holdings, which is a great obstacle to agricultural progress, the high rate of interest on borrowed capital, which makes the investment of capital unprofitable and sinks the cultivator deeper and deeper into debt; the lavish expenditure on marriage ceremonies and other social calls of the like nature. These causes are aggravated by monsoon failures which take a heavy toll of the cultivator's cattle and cause a heavy financial strain on the already meagre resources of the peasantry. Of all the causes I am inclined to believe that the heavy rate of interest at which the cultivators borrow their capital is the most potent one. Their industry cannot flourish under such conditions however ably managed. Lack of capital at a cheap rate of interest prevents the cultivators from resorting to intensive methods of farming. The agricultural industry naturally remains in a very primitive condition. The fragmentation of holdings is also responsible for hindering efficient and economic cultivation. The cultivators are always living on the margin of subsistence. They have no reserves. A year of famine therefore completely ruins them. They are compelled to borrow money, which they do at such a ruinous rate, that it is well nigh impossible for them to become solvent again. It has been sometimes maintained that the land revenue policy of the government is responsible for the indebtedness of the cultivators. The late Mr. R. C. Dutt was a leading protagonist of the view. He was a great believer in the Permanent Settlement and he always held the revenue policy of the government in temporarily settled areas responsible for the indebtedness and poverty of the ryots. He believed that the assessments in Ryotwari areas as well as other areas of temporary settlement were very heavy. At one time during the beginning of the British administration the assessments did tend to press hard on the cultivators. The fact that the land revenue was paid by the money lenders in Gujarat is a conclusive proof.[1]

[1] Bombay Gazetteer edited by Campbell.

There was very little elasticity in the administration of the land revenue. The erroneous notions then prevalent that the government was the ultimate land lord and has a right to appropriate the whole economic rent were also partly responsible for over assessment. The tendency of the Government however has been to decrease the rate of assessment in proportion to the gross outturn. It can no longer be maintained that land revenue in Gujarat to-day is by itself the cause of rural indebtedness when it hardly amounts to more than 8 p.c. or 1/12th of the gross outturn. Since 1907 the old rigidity of administration has given place to greater elasticity. During bad years suspensions and remissions of revenue are generally made. Another cause of rural indebtedness to which reference has been made by several writers on Indian rural economy and by the revenue settlement reports is the facility afforded by the occupancy tenure introduced by the British in Bombay Presidency for borrowing money. Land has become a very valuable asset and a very good security for loans. Owing to the stability and order introduced by the British, the growth of population improved means of communication, which has considerably widened the market in which the producer can sell his produce, the value of the land has considerably gone up. The peasant's security has become more valuable, with the result that he finds it easier to borrow money. The survey or occupancy tenure has given almost full proprietary rights to the occupants of land. They can sell, dispose or mortgage any part of the land. The Famine Commission of 1901 came to the conclusion that the growth of indebtedness had been largely aggravated by the fact that the new system of land tenure had enabled the ryots to obtain credit very easily. "We desire to call special attention to the agrarian system introduced by the survey settlement as an accentuating cause of indebtedness, more especially to unrestricted rights of the cultivators to transfer their holdings which the survey settlement recognised. The survey or the occupancy tenure confers for all purposes full proprietary rights on the cultivators. They can relinquish any portion of their holding or extend their holdings by buying more land. The assessment

is levied on each separate survey number and not the entire holding of the cultivator. His property however is liable to be attached by the Government if he fails to pay punctually this land revenue to the government. The assessment was intentionally kept low, as the revenue was to be collected in bad as well as good years. The original framers of this land revenue policy believed in rigidily collecting the land revenue. The authors of the new system held that the best way to excite the cultivator to independence and to create agricultural capital was to exempt him as much as possible from the pupilage to, and surveillance by, government officers. It was, it was said, an obvious advantage to get land out of the hands of the cultivators unable to pay their dues and to transfer it to cultivators with more capital. As the customs and native revenue systems are adverse to land transfers, it is therefore all the more necessary to adopt measures for giving them effect; accordingly, it was decided that there should be no interference by government officials with the people and that no enquiries should be made regarding the financial condition of the cultivators."

"Thus things were left to take their own course and the result was, as invariably happens when an ignorant and improvident peasantry can dispose, without restriction of valuable rights in the land, that the cultivators sank deeper and deeper into debt and that their property began to pass out of their hands. It must be admitted that the conditions on which the peasantry held their lands under the revenue system helped to bring this about. The rigidity of the revenue system forced them into debt, while the valuable property which they held made it easy to borrow. This is the state of things to day and while it remains unaltered, indebtedness in Bombay presidency must continue to increase." "They looked for the capitalist cultivator and we find the Sawkar's serf."

Things have changed since the Famine Commission wrote its report in 1901. The old rigidity of revenue collection has given place to greater elasticity and in certain parts

of the Bombay presidency, a new kind of restricted tenure has been introduced, whereby the cultivator can not mortgage or sell his land without the consent of the Collector.

We have examined the fundamental causes of rural indebtedness in Gujarat; we will now survey the sources of the agriculturist's capital in Gujarat. The cultivators usually get their capital from one of the three following sources.

1 The private money lender.
2 The Takavi grants of the government.
3 The co-operative credit societies.

We will discuss here the first two sources as the third source has been treated in a separate chapter.

About ninety per cent of the present capital invested in agriculture is advanced by private money lenders. Only 10 p. c. of the cultivators in Gujarat are members of co-operative societies and the available working capital per member of these societies does not come to more than 75 Rs. This sum is too meagre for the working expenses of a cultivator and he has therefore to supplement it from outside sources. On the whole therefore the greater part of the capital required by capitalists in Gujrat is, supplied by private money lenders.

These money lenders are of all imaginable types and shades, from the highly respectable banker to the cruel and heartless Shylock. Most of these money lenders, like the Irish Gombeen man, are village shopkeepers and traders. There are some successful cultivators, who besides farming, have taken to the profession of money lending. Besides, these two classes of money lenders, there are more respectable Sawkars who lend to bigger cultivators and in large amount. Their dealings are as a rule honest and straightforward. They charge from 6 to 12 p. c. and lend money both on personal security and the security of land. When the security is mortgage with possession, they permit the cultivator to farm the land. Generally they are not land-grabbers. They always accept cash payments. They do not charge discount to open the accounts and as a rule they do not drive hard bargains.

The most important group of money lenders consists of the village shopkeepers, who deal with small cultivators. They are generally grocers, drapers, brokers, and grain merchants, all rolled in to one. They advance their goods and wares on credit to cultivators of their villages and they also give cash loans. Their rates of interest are much higher, ranging from 12 to 20 p. c., and they charge some discount before opening the account. They generally accept the produce of land in place of principal and interest. They have one way of calculating the value of the produce given by the cultivators and another way when they sell it to the cultivators. They credit them with a much lower price for the produce sold to them and debit them with a higher price for all goods bought from them by the cultivators. One of the Settlement reports of a taluka in Surat district says " Food grain taken on credit has to be paid back 1½ maunds for every maund borrowed; for seeds two maunds for every maund. Tobacco and such other articles are charged at 12 p. c. above the market price, for example a rupee's worth of tobacco is entered in the books as Rs. 1-2-0. The accounts are settled only once in the year, about June. They advance money to the farm labourers but their rate of interest in case of such loans sometimes varies from 25 p. c. to 75 p. c. It is quite usual for them to charge one anna per month per rupee. Most of them own some land in the village acquired by foreclosing or purchase. Their dealings with backward and ignorant Kaliparaj class of Surat district and of Navasari, in Baroda State, are extremely harsh. The cultivators have to buy and sell their produce to them and are so hopelessly sunk in debt as almost to have become the serfs of the Sowkars. The cultivator money lender is also extremely harsh in his dealings with lower classes like Bhils, Kolis and others when they borrow money from him.

Bombay Gazetteer edited by Compbell.
Baroda Economic Enquiry Committee.
Revision Settlement report of Bardoli taluka.
Bombay Gazetteer edited by Campbell.

The sawkar in one sense has been playing a very useful role in the agricultural economy of Gujarat. He is easily accessible to the cultivators. He keeps constantly in touch with them. He receives their produce and he tries to help the cultivators when they are in difficulty. He gives the cultivators ample time to repay their loans. He is such an important institution in the rural economy of India that in certain parts the cultivators pray to the gods to keep their sawkars pleased. Sir Denzil Ibbeston recorded the fact that at the opening of the ploughing season raiyats particularly address an earnest prayer to Dharti Mata (Mother Earth) to this effect.

" Keep our rulers and bankers contented and grant a plentiful yield[1].

The main charge against the money lender as a class is that he is unscrupulous and dishonest in his dealings and his rate of interest is so excessive that it almost amounts to robbery. It has however to be borne in mind that his customers have no security to offer and the risk involved in such loans is so great and the difficulty in recovering the money is so great, that it would not be worth while for the money lender to lend money to these cultivators unless there was a correspondingly high return[2]. In the Middle ages, when the Lombard merchants lent money to the English Kings, they also naturally charged an excessive rate of interest. They were undertaking a tremendous risk which required compensation, in the shape of a high rate of interest.

The money lender had existed in India from ancient days. During the Maratha regime, the revenue was largely paid by the money lenders. There is however every reason to believe that the volume of indebtedness has considerably increased. This increase of debt is due to the great increase in the value of land brought about by stability and sense of security introduced by the British. The improved means of communication and transport opened out wider markets for

1. Woolf's Co-operation in India.
2. Morrison's Economic Organization of an Indian province.

the produce of the cultivators and commodities like wheat, cotton, oilseeds can command the markets of the world.

Before the British occupation of Gujarat the province was in a miserable condition. By 1818 the British became the masters of the greater part of Gujarat and the Gaekwad, who occupied remaining portion of Gujarat, came definitely under the supervision of the British. Peace and order were established everywhere. The value of land began to go up. The survey tenure introduced by the British in their districts coupled with rise in prices, sent up the land values in British Gujarat. In the Gaekwad's dominions, the revenue reforms and the improvement in the administration brought about by the present ruler have brought about a rise in the value of land. In the past capital had become very scarce and the little store of money that existed naturally remained buried in the ground lest it might attract the cupidity of the rulers or the plundering tribes. The sense of security and the increased land values were largely responsible for increase in the growth of indebtedness. The law courts made it easy for the money lenders to recover their money. The sudden expansion of credit was accompanied by grave dangers as was pointed out by the Famine Commission of 1901. The placing of valuable credit in the hands of the ignorant cultivators made them an easy prey to the money-lenders; and everywhere the reports of the revenue officials showed the tendency of lands to pass from the hands of cultivating classes into those of money lenders. A class of dishonest money-lenders came into existence which began to exploit systematically the poor cultivators. In Deccan the result was the outbreak of the Deccan agriculturists riots and led eventually to the passing of the Deccan Agriculturists Relief Act of 1876, which was subsequently extended to the rest of the presidency of Bombay. The idea of this Act was to protect the cultivators and it did so by stopping alienation of land from agriculturists to non-agriculturists, by placing certain restrictions on the recovery of loans and by settling the money claims by means of a special method of making up the accounts. The Act provided safeguards against

money-lenders committing frauds in the accounts and obtaining from ignorant peasants bonds for larger amounts than are actually paid to and due from them. It provided a machinery for conciliation. It enabled the courts, in contested suits, to investigate the entire history of transactions between the parties and do equitable justice between them. It restricted the sale of the ryot's lands in execution of a decree and provided an insolvency procedure more liberal to the debtor than that of the Code of Criminal Procedure. The Act provided the appointment of village registrars before whom every written obligation for the payment of money should be registered and it required money-lenders to give receipts to agriculturists for all payments made by them, to render accounts and to give the agriculturist clients a pass book.

The Act was not however quite successful. To a certain extent it restricted the credit of the cultivators and the provisions of the Act were evaded; village registrars were found to be hopelessly corrupt. The writing of documents by them or under their superintendence was found to constitute no safeguard whatsoever to the agriculturists. The Government has now practically ceased to make these appointments. Conciliation has not been a success and the insolvency procedure introduced by the Act has never been made use of. The only effective part of the legislation is the provision enabling the court to go behind the actual terms of the contract and to do equity to the cultivators. The immediate effect of the Act was to improve the position of the agriculturists-" under the provision empowering the court to investigate the past history of the cultivator's debts, to reduce exorbitant interest, to disallow compound interest, to set aside previous settlement and adjustments and: to fix instalments for the payment of what should be found due, the agriculturist found himself freed from a position, which, in some cases, was almost hopeless and whether relieved of debt altogether, or placed in a position in which he has every hope of paying his debt off. Again, under the redemption clauses, he regained possession of land which he had morgaged up

to the full value and which would have been lost to him for ever. These advantages to the agriculturist debtor were obtained at the expense of the money lender, who lost heavily by the provisions of the law which he had not foreseen and which were brought to bear on his past transactions. In this process whilst the court swept away many unfair contracts and reduced much usurious interest, they probably also disallowed many genuine debts which the money lender was not able to prove because he had not anticipated that he would be asked to prove them. The agriculturists were naturally delighted with a law which freed them from debt and restored to them their lands, and the sawkars were correspondingly depressed. Then came the after effect, which was profoundly to alter the relations between creditors and debtors, to drive the best of the sawkars out of a business which had ceased to pay when honestly conducted, and to compel those who continued their business to resort to dishonest methods to make it successful. It is with the after effects or permanent effects that we are now principally concerned, and on these, the Act has to be judged. The present moment is admirably suited to an examination of the working of the Act since it has been in force for over a generation in the four districts in which it was first applied and for a few years only in the rest of the territory. Thus its immediate and later effects can be observed simultaneously. It is noteworthy that while the cultivating class were loud in praises of the Act on its first introduction, when they saw their debts cut down and land redeemed, it has lost some of its charm, now that they realise it restricts their credit and disadvantageously affects the terms on which the money lender is willing to make advance." This long citation just quoted comes from a report submitted by a committee appointed in 1912 to examine the working of the Act of 1876. The same committee concludes that the Act resulted in a contest of dishonesty in which that side is likely to gain the upper hand which is prepared to go farthest in perjury and in the production of false evidence. Witness after witness has testified to this demoralisation. Distrust has been engendered on both sides. The honest sawkar and the honest

cultivator both suffer alike, since in their dealings with one another, they have to allow for the judgment of a court, which will presume dishonesty on both sides. Hence it is that an Act whose main object was to put the relations between agriculturists and money lenders on a better footing, is actually having an opposite effect.*

Legislation has been tried in other provinces to protect the cultivators from the rapacity of the money-lenders. The Punjab Land Alienation Act of 1901 was passed to prevent the land of the cultivating classes from passing into the hands of non-agriculturist money-lenders. Under the provision of this Act no permanent alienation can be made by the cultivators without the sanction of the revenue officer. Such sanction is to be given as a matter of right when the alienator is not a member of the agricultural tribe or when the member of the agricultural tribe alienates to an agriculturist in the same village, or to another member of his own tribe residing in the district. In any other case, inquiry is to be made by a revenue officer not lower in rank than a deputy commissioner into the circumstances of the proposed alienation and sanction may be given by the officer at his discretion. In case of temporary alienations, if made to any person who is not a member of the same tribe or of a tribe in the same group there are certain restrictions to protect the interests of the agriculturists. Leases of agricultural land are also prohibited except for a term of twenty years as also all contract of the nature of mortgages with conditional sale. Hypothecation of the produce of land is allowed only for one year. No land belonging to a member of an agricultural caste can be sold in execution of any decree or order of any civil or revenue court.

In the Bengal Economic Journal and his book "The Wealth and Welfare of the Punjab" Mr. Calvert has examined carefully the working of this Act and he is inclined to think that the Act has done much good. It has not in any

*The report of the committee to consider the Deccan Agriculturists Relief Act 1912.

appreciable way restricted the credit of the Punjab cultivators and he has illustrated his thesis by figures.*

"The average price of land was Rs. 78 per cultivated acre for the five years prior to the passing of the Act, it fell to Rs. 75 for the next five years but rose to Rs. 98 in 1906 and 1907 and has since steadily continued to rise until it is now well over Rs. 200. The average area sold in the five years, preceding the Act was 162,000 acres, for the next five years, it dropped to 135,000, in the next period, it dropped to 121,000 and again between 1910 to 1916 went up to 140,000 acres. He further shows that the percentage of area mortgaged has steadily gone down and the agriculturists have succeeded in considerably redeeming the mortgaged lands." To sum up, the Act commands the confidence and approval of the peasant population and has largely achieved its object. In almost every village the 'Akt intikalat' is spoken of as the Magna Charta of the Zamindar. Mr. Darling however is inclined to differ from this view and considers whether it would not be advisable to abolish the Act now. He suggests that the agriculturists perhaps are protected from the money lenders but that they are now in the clutches of cultivators who carry on the profession of money lenders and are perhaps worse than the old class of money lenders particularly in their dealings with other agriculturists if they do not belong to their own caste. He further maintains that the protection of law tends to destroy the spirit of self-help and independence. It results in maintaining inefficient and less skillful cultivators on the soil.

In Bombay Presidency besides the Deccan Agriculturists Relief Act, a restricted tenure was introduced in 1901 in certain backward areas where the holder of the land cannot alienate it without the consent of the revenue authorities. It has sometimes been suggested that usurious activities of the money-lenders could be checked by only allowing licensed

1. Calvert's Wealth and Welfare of the Punjab.
2. Darling's The Punjab peasant in Prosperity and debt pp. 186-228-229.

money-lenders[1] to carry on the business of lending money. The money lenders must be compelled to enter all transactions in a pass book of a definite type and give these books to the peasants. There is a Usury Act in force in almost all parts of India. Experience however has clearly demonstrated the futility of all such legislation. The only alternative is the substitution of the money lenders by an agency which can lend money at a cheaper rate and which would not resort to unfair practices. The money lender would automatically disappear or considerably reduce his rates of interest.

We shall now examine the second source of capital for the agriculturists. The Hindu and Mahomedan rulers in the past used to advance loans to the cultivators in times of distress, known as Tagavi. This system was adopted by the British administrators also under the Land Improvement Loans Act, XIX of 1883 and the Agriculturists Loan Act XII of 1884 the Government advances Tagavi to the peasants. Under the former Act money is advanced for specific purposes of land improvement and under the latter for seed, cattle and other miscellaneous agricultural purposes. The objects of the two Acts are closely connected, for it will often be the case that in order to make efficient use of his improvement, the cultivator will find it necessary to provide himself with cattle and manure and the like if not actually with the seed. The Government advances money at $6\frac{3}{4}$ p. c. rate of interest. The cultivators have to apply to the district collector for such loans. The loan can be recovered by the revenue officials along with the collection of the revenue and by a summary process. At present the Tagavi loans in Bombay Presidency are made also through the co-operative societies. The Tagavi loans are not quite popular and the cultivators have not quite fully availed themselves of them. Mr. Voelcker in his report on the improvement of Indian agriculture and the Irrigation Commission of 1904 have pointed out some of the defects of the Tagavi loans. The evidence before the Royal Commission on Agriculture last year also showed some of their defects.

1, Evidence of G. H. Desui before the Royal Agricultural Commission 1927 Vol. II.

The cultivators seldom avail themselves of the Government Tagavi except during famines or immediately after famines. The Irrigation Commission says of these loans "We are far indeed from saying that even in Bombay and Madras the amounts advanced for land improvement have been as large as might have been if the Governments and their officials on the one hand and the people on the other hand had been fully alive to their opportunities. It is worth noting that in Bombay during the normal years from 1893 to 1896 out of 18 lacs advanced, 12 lacs were given in three districts of Belgam, Dharwar and Bijapur, where vigorous measures had been first started on the initiative of an individual officer, who for a series of years administered the collectorates of Dharwar and Belgam. In Madras the largest amount was advanced in Coimbatore and that was due to the efforts of the collector. It is perhaps not too much to say that the history of the fluctuations in the amounts of Tagavi taken up in any province is the history of the interest taken in the matter by individual officers who were quick to apprehend the kind of improvements which the agriculture of their districts required and the value of Tagavi advances as stimulus to the execution of such improvements as were most suitable to the locality and its needs.[1] The success of the Tagavi loans has therefore always depended upon the enthusiasm of the collector. There has been no initiation from the cultivators themselves.

The main defects of the Tagavi system are its rigidity of collection. It is always pointed out in contrast to Tagavi advances that the money lender gives time willingly to his clients. The borrower repays at his convenience.[2] The Government rarely permits this. There can hardly be any doubt that this does constitute an objection in the mind of the cultivator to becoming a debtor to the Government.

In order that the Tagavi loans may be fully utilised the period of repayment must be extended and there must be as much elasticity as possible in the collection of loans. There

1. Report of the irrigation Commission 1904.
2. Evidence before the Royal Agricultural Commission Vol. II.

is at present much delay and considerable trouble before the cultivator gets the loan which he requires. The official procedure is inconsistent with promptness in execution. It involves official inspection and perhaps a visit to head-quarters. Even when the loan is sanctioned the cultivator is not sure of getting the whole amount of the loan granted. There is a general complaint that there is considerable leakage and a substantial portion of the advance is apt to stick to the hands of subordinate officials through which it must pass. The peasants have not yet learnt to revolt against this ancient tradition of official corruption and put an end to it by appealing to superior officers against the doings of the subordinates.

CHAPTER IV.

Agricultural Wealth.

The total area of the five British districts of Gujarat is over six million acres. The following figures will show the area under cultivation, and the total cultivable area from 1891 to 1927 :–

	1891.	1901.*	1911.	1921.	1925–26.	1926–27.
Total area for which statistics are available.	6,170,269	6,115,357	6,118,148	6,176,296	6,154,968	6,181,754
Total cultivable area.	4,892,486	4,747,600	4,730,165	4,946,723	5,088,180	5,256,686
Area under cultivation.	4,504,999	4,316,014	4,336,133	4,696,017	4,814,298	4,808,661
Current fallow	1,008,790	1,816,372	1,278,894	922,335	642,065	562,914
Net area cropped.	3,426,609	2,499,642	3,056,339	3,773,682	4,172,232	4,245,747

The figures show that more than 70 p.c. of the total area is available for cultivation and nearly all that area is cultivated. Hardly seven per cent. of the total cultivable area is not actually under cultivation though the percentage of current fallow land is rather more than desirable.[1]

The two important agricultural seasons in Gujarat are the Kharif which begins in June and the crops are harvested in October, and the Rabi where the sowing operations begin in November and the crops are harvested in March. The suc-

*1901 was a famine year.

[1] District Gazetteer of Bombay Presidency and Season and Crop reports.

cess of the Kharif crops depends upon a well distributed rainfall. Heavy rains in the early part of the monsoon and a subsequent deficiency are as disastrous to the crops as the scarcity of rain. For a successful Rabi season there must be rains in September. The Rabi crops however depend upon artificial irrigation

The principal crops of Gujarat are (a) cereals – rice, wheat, Bajri, Juwar, Kodra, Maize, (b) Pulses – Tuver, Magh, Urad and Wal, (c) oil-seeds, (d) tobacco, (e) sugarcane, (f) fibre particularly cotton, (g) vegetable and orchard produce, (h) spices.

Cotton is more extensively grown on the black soil of South Gujarat, while Juwar, Bajri and wheat are more sown on the lighter Goradu soil of North Gujarat.

During the last sixty years there has been a noticeable change in the area under cultivation of the various crops in Gujarat. [1]) Before 1860 the food-crops played a more important part in the agricultural economy of Gujarat than they are doing now. The area under cultivation of commercial crops has been steadily growing at the expense of the food-crops. Cotton has been very largely displacing rice and Juwar. The variation in the area under food crops from 1891 to 1927 is shown by the following figures :-

Year.	1891.	1901.	1911.	1921.	1925-26.	1926-27.
Acres.	25,38,448	20,04,763	21,97,981	21,60,859	17,98,000	25,49,000

The area under commercial crops being for the same years :—

Acres.	1000853	512397	1046361	1686183	2574000	1696000

1) Datta's Report on the rise of prices in India, Vol. I.

The figures for the year 1901 are misleading because it was the year of great famine in Gujarat and a very great portion of the land was thrown out of cultivation. These figures are, however, not sufficiently expressive but if we compare the percentage which they bear to the total cultivated area, my thesis will become quite evident.

Percentage of net cropped area.

Year.	1891	1901	1911	1921	1925	1926	1927
Area under food crops.	72	80	67	51	50	44	58
Area under non-food crops.	28	20	33	49	50	56	42

The area under cultivation of cotton has shown a remarkable increase.

Area under cultivation of cotton in thousands of acres.

Year.	1891	1901	1905	1911	1921	1926	1927
	793	369	796	840	940	1389	947

In the Baroda[1] State the proportion between cotton and food crops is revealed by the following figures :–

Year.	Cotton.	Foodcrops.
1881–1890	20·7	68
1891–1900	21·7	68
1900–1904	24·7	64·5
1917	27·4	62·2
1921	25·6	55·9

1) Baroda Census Report 1921.

In 1911 the production of food crops available per man was 11·8 maunds [1]) while that of non-food crops was 2·45 maunds, while in 1921, the food crops available per man was 5·27 maunds and non-food crops was 3·27. There is no doubt that the total amount of pure food crops like rice, Juwar, wheat, Bajri, Kodra produced to-day is distinctly smaller in proportion to the commercial crops like cotton, tobacco, oil-seeds than what it was about 50 years ago. Mr. Datta, in his report on the rise of prices in India, had referred to this change in the agricultural economy of India and he had collected figures, showing in detail, the area under cultivation of food crops and non-food crops. I have brought these figures more up-to-date by including those for the year 1921, 1926 and 1927.

In thousands of acres.

	1891.	1901.	1905.	1911.	1921.	1925-26.	1926-27.
Rice	337	210	114	309	299	292	362
Wheat ...	259	185	132	195	126	76	319
Juwar ...	555	620	616	542	622	529	641
Bajri	544	437	443	414	370	291	391
Ragi	91	58	66	96	74	89	94
Oil-seeds ...	156	110	161	150	126	201	189
Tobacoo ...	31	26	18	34	51	51	40
Cotton ...	793	369	196	840	940	1,400	947

Mr. Datta argues that the rise of food prices in India after 1894 and a rapid rise after 1905 was largely due to the substitution of commercial crops for the food grain. There is a large section of the Indian economists who view with alarm this tendency of commercialization of agriculture

1) The Gujarat maund=40 lbs.

and consequent rise in the price of food stuff in India. They also believe that the export of food grains must be discouraged. We must try and examine from a pure economic point of view this opinion which is so widely entertained in India.

The opening of the railways in India, construction of better roads and more rapid means of communications, have considerably extended the Indian markets and for some commodities like cotton and wheat, the market has become almost world-wide. Prior to the introduction of railways and the contraction of distance between the various parts of India and between India and other parts of the world brought about by the modern improved means of communication, every village in India was more or less a self-sufficing entity. Prices fluctuated considerably according to the nature of the harvest. Abundant harvests meant low prices for the cultivators. There was no market for the surplus produce. Mr. Mackay writing about Gujarat in 1825 says that the "Harvest was so abundant that it was lying useless in the hands of the cultivators" and that they were unable to find a market for it. There was very little external trade. Every village produced what it required for consumption. There was no incentive to produce more valuable commercial crops, as the market was extremely limited in scope. There was no alternative for the cultivators except to grow what they needed.

Things have now considerably changed. A farmer undertakes his work just as much for profits as a businessman or a manufacturer1). He naturally will try to utilise his land in such a way as to yield him the largest net return. He is no longer restricted to food crops. He can grow commercial crops and sell them in the outside markets and with the realised money supply his daily wants. He may grow cotton and sell it and with the proceeds buy rice, Juwar, wheat or Kodra or any other article he requires. He may grow a more expensive food crop and buy with the proceeds of the sale of his crops cheaper food grains which he and his family may consume. There is no reason why he should not do so. The

1) Calvert's Wealth and Welfare of the Punjab.

farmers all over the world naturally grow those crops which are most remunerative for them. In Germany[1]) for example, the farmers at one time grew wheat which was exported to England, while they used rye for home consumption. Commercial crops like cotton or tobacco or oil-seeds, if they are more remunerative are bound to displace less paying crops. The objection against this tendency rests mainly on the ground that it results in shortage of food stuff in India and that it causes the price of food grains to go up. If the exports of these articles were discouraged by restrictions, a greater area would be devoted to the growth of food crops. This line of reasoning, however, is highly fallacious. The prohibition of export of food stuff, however, would result in lowering of prices and the substitution over part of the area under cultivation of commercial for food crops. In times of emergency there might be justification for controlling the export of food stuffs. A famine or war may necessitate the preservation of the food supply for home consumption, but apart from such extraordinary circumstances, there is very little justification for such a measure. The Fiscal Commission in 1921–22 1) came almost to the same conclusion on the question of export duties on food stuff going out of India. A measure like that may result in the shrinkage of total area under food crops.

There is no reason to be alarmed at the substitution of commercial crops for food crops, if it results in giving additional purchasing power to the cultivators[2]). They can always buy the food crops with money realised by the sale of more expensive crops. Just as manufacturing countries like England buy with their industrial products food which they require, in the same way India can buy her food with money obtained in exchange for more paying and expensive crops. We have examined purely the commercial point of view and the interests of the cultivators. It sometimes does

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1) Clapham's Economic development of France and Germany.

2) Calvert. Wealth and Welfare of the Punjab.

happen that the private net advantage of a particular section of the community may conflict with social net advantages. During the war in England for example the interests of the country demanded the production of food crops. Every effort was, therefore, made to encourage their production1). In India, therefore, if ever private gain definitely clashes with the social advantage, there may be grounds for raising objection to the present tendency of growing commercial crops at the expense of food grains. At present, however, there is no cause for immediate alarm, but if this tendency is carried to an abnormal extent, it might become in abnormal times a cause for anxiety. The complete dependence of Great Britain upon foreign sources of food supply placed her into a very awkward position during the last war. The country was forced with a situation where it became absolutely imperative that it must considerably augment its own internal food resources. The experience of war has taught its statesmen the necessity of fostering her neglected agricultural industry.

One outstanding feature of the Indian agriculture Economy, therefore, is the gradual commercialization of agricultural industry. India is slowly passing from a self–sufficing economic regime to a commercial regime. Area under cultivation of cotton, jute or oil–seeds depends more upon the market price of these commodities. The prosperity of her agricultural industry depends as much upon external factors like war in Europe which might cause a greater demand for Indian products or again a depression in Europe or falling off in the purchasing power of European consumers might re–act adversely on India's agricultural prosperity, as purely internal factors or demand in India. A political or economic crisis in Europe, or a disease affecting the cotton plant in America have a vital interest for Indian farmers.

The Gujarati cultivator knows the importance of the rotation of crops, the use of manures and careful tillage. The testimony of European agricultural experts like Dr. Vocleker

1) Hall's Agriculture after War.

shows that the Gujarati cultivator is not lacking in knowledge and skill and that when he does not make sufficient use of manures or more frequent rotation of crops, it is due to his want of capital at a reasonably cheap rate of interest and the fact that his restricted holding prevents him from making experiments in rotation of crops or keeping a certain portion of his land fallow.

The practice of growing mixed crops serves partly the purpose of rotation of crops.[1] As a rule, in Gujarat, one would find the Gujarati cultivator, mixing pulses or oil seeds with his principal Juwar or Bajri crop. The mixed crops are a sort of insurance against the total harvest failure. Pulses auxiliary to cereals play another important part. The pulses in their growth fix nitrogen in the soil which is useful for cereals. Indian soils as a rule are deficient in nitrogen. The successful practice of growing mixed crops in Gujarat points to the fact that the practical experience of uneducated Gujarati cultivators discovered centuries ago a means of providing an inexhaustible supply of nitrogen for the soil of which chemists have only recently learnt the scientific explanation. All cultivated plants are apt to degenerate and become subject to diseases, if grown without intermission on the same land. Moreover, a plant which becomes of low vitality on this account is much more subject to insect attack than one which is robust or healthy. In Gujarat, the cultivator, therefore, where possible, systematically tries to rotate his crops. The garden crops of Surat district are very carefully rotated. However in case of dry crops less attention is paid to careful rotation, because of the existing system of growing mixed crops. Climate interferes with the rotation of crops because the agricultural season is in case of certain crops limited and they must be grown during that period. Rice is generally grown on the same land year after year during the monsoon when alone it can be grown, but as a rule Val is taken as a second crop which serves the purpose of rotation. The common rotation observed in Gujarat on the black soil is cotton followed by Juwar. In Surat and more in Broach

1 J. Mollison's Text Book on Indian Agriculture, 3 volumes.

Cotton–Juwar rotation is lengthened by taking a wheat crop in the third year. On Goradu soils where Juwar and Bajri form the principal crops they are mixed with Tur and Guwar, Math, Mag, Chola (pulses) or cotton and castor.

Besides proper rotation of crops and the use of improved implements, the most important question for agriculture in Gujarat is that of manure.[1] Improvement in the system of land tenure, improvement of the land by expenditure of public and private capital on it and similar measures may alleviate the conditions of the Indian cultivator but they will not give him larger crops and they will not provide the food that the people must have to live upon. For this the soil itself must be looked to, as it alone can produce the crops. Manure alone enables it to bring forth the necessary increment. The question of manure supply is accordingly indissolubly bound up with the well-being and even the bare existence of the people of India. The most generally used manure in Gujarat as in the rest of India is cattle dung. In England this farm yard manure is supplemented by artificial manure, it is not so in India. Cattle dung is the universal fertilizer and often the only one available. Unfortunately people in Gujarat do not quite realise how important it is in consequence. It is quite a general practice in Gujarat villages to burn this dung as a fuel and it is generally used for plastering the floors of houses. It is not an unusual sight in Gujarat to see troops of women carrying, in baskets on their heads, loads of cow-dung cakes to be used as fuel. Mr. Lupton in his book called "Happy India" has dwelt at length upon this subject. It has very often been remarked that the people in India are compelled to burn cow-dung because they cannot get cheaper fuel. If there is any truth in this remark every measure must be adopted whereby cheap fuel may be made available to the people. The problem should not be so difficult in case of India, where there are so many forests. The only difficulty would lie in transporting fire–wood cheaply from the forests to villages where the fuel is

1 Dr. Voeleker's Improvement in Indian Agriculture,
1 Lupton's "Happy India."

required. The importance of cattle dung as a source of manure must be impressed upon cultivators and this tremendous want of manure supply must be prevented. Throughout India as well as in Gujarat the farmers do not carefully preserve their farm yard manure. It has been said that the cattle manure in India is of a very poor quality as the cattle are very badly fed. Mr. Voeleker does not agree with this view. After a carful analysis he found that in phosphoric acid, it was quite as good as English farm yard manure while it has double the amount of nitrogen. The bad feeding of the cattle, however, diminishes the quantity of manure.

In Gujarat, the best cultivators do not burn dung, except out of sheer necessity, because they have no other fuel. Sometimes in Gujarat the land is manured by folding sheep and cattle on it. This system has one great advantage that the urine is also retained on the field. Refuse obtained from various oil-seeds after the oil has been pressed out of them is another important source of manure supply in Gujarat. The principal oil seeds thus used are castor oil-seeds, til or sesame, ground nut safflower, rapeseed, mustard seed, linseed and cotton seed. In India, however, oil seeds are largely exported and this export implies the removal of a very considerable amount of the constituents of the soil. If the oil cakes remained in India and were given as fodder to the cattle, the manurial constituents would be returned to the soil from which they were drawn and the balance of fertility would be maintained. To export the oil-seeds, therefore, amounts to the export of soil's fertility. The question of restricting export of oil-seeds was seriously considered, but the interests of the export trade of oil-seeds would seriously conflict with any such measure[1].

Sometimes green manuring is also resorted to for purposes of manuring in India. San is the crop most generally ploughed in. Frequently on rice fields weeds are allowed to grow and then used as manure. Silt from rivers is also used as

1.) Report of Committee appointed by Board of Agriculture on the question of export of oil-seeds.

manure. In Gujarat one curious practice of manuring is soil mixing. At Nadiad, Dr. Vocleker saw how the cultivator used this kind of manure. "The fields" he says "are surrounded by hedges growing on embankments. When it is required to turn a field into a rice field, the top soil is thrown from the centre up against the hedge, thus making an embankment. The level of the ground is lowered. The rain water is held up and soaks the soil thoroughly. When in turn, the field requires to be manured, the soil is thrown back from the hedge side on the field and is spread over it."

Nitre, as a manure is very little used owing to its high price. Experiments at Government farms have shown that it gives a considerable increase in the outturn of cereal and other crops but the fundamental thing from the cultivator's point of view is whether in comparison with extra expenditure involved in using these chemical manures, the increase in the output would be paying. They could be only used in case of commercial crops likely to bring in high prices. Bones are useful as supplier of manure and particularly of phosphates. They are also largely exported from India and the question of discouraging their exports also should be seriously considered. Fish manure is seldom used by Gujarat cultivators whilst the use of artificial fertilizers would be beyond their reach. At one time the cultivators were reluctant to use night soil for manurial purposes but this prejudice is gradually dying. Experiments are being tried on the Government farms for ascertaining what manure would be most profitable from the farmer's point of view.

Next to manure, for the farmers the proper selection of seed is extremely important. Indian agriculture can never make much progress as long as the cultivators depend upon the village grain dealers for the supply of seed which they require for their farming operations. They can never be sure of getting a supply of good seeds and at the same time they will have to pay a high price for what they get. As a rule, good cultivators try to keep their own seeds from the last year's harvest. The co-operative supply societies, however,

can play a very useful part in the supply of good seed at a cheap price.

Here again the Italian example may be usefull In Italy, the agricultural consortiums serve a very useful purpose in the distribution of good seeds throughout Italy. These consortiums have their factories for the manufacture of artificial fertilizers and they have their depots for the distribution of their products throughout Italy. The agricultural consortiums have played a very important part in the supply of good seeds and spreading the use of chemical fertilizers.

We would now examine the agricultural wealth of Gujarat. Cotton plays by far the most important part in the agricultural economy of Gujarat to-day. The American Civil war of 1864-65 was largely responsible for the extension of cotton cultivation in Gujarat. The price of Indian cotton rose sharply during the American Civil War (1861-1865) as the following table will show.

The price of cotton per one rupee :—

1860	8 lbs.
1861	7 lbs.
1862	2½ lbs.
1864	1 lb.
1865	1 lb.
1866	1 lb.
1867	3 lbs.
1868	3 lbs.
1869	3 lbs.
1870	3 lbs.

These inflated prices did not last long, but the subsequent growth of the cotton industry in Bombay created a steady demand for cotton and it naturally began to displace other crops where it could be grown suitably.

For the growth of cotton, Gujarat may be roughly divided into two parts, the north Gujarat, North of river Narbada and

South Gujarat consisting of Surat district and the Navsari division of the Gaekwad's territory. The cotton of North Gujarat is known as Dhollera and is grown in Ahmedabad, Panchmahal and Kaira districts. The South Gujarat produces the variety known as "Broach" cotton. The important varieties of Dholera cotton are Lalio and Wagad. In Kaira district and Daskroi Taluka there are other varieties known as Kanvi, Goghari and Rozi [1]. The staple of these varieties is much shorter than the Surat cotton varying from 5/8 to 6/8. The trade variety known as "Broach" is best in Surat and Navsari division of the Gaekwad's dominions. At one time the cotton grown in Broach district was quite as good as one grown in Surat but owing to mixture with Goghari, it has deteriorated. The high ginning percentage of Goghari cotton made it very popular with the cultivators, with the result that it was extensively grown in Broach district but it spoiled the reputation of the Broach cotton. The staple of cotton grown in Surat and Navsari districts is 7/8 to 1 inch and the ginning percentage from 31 to 32. Cotton is seldom manured in Gujarat and never irrigated in the black soil on which it is grown.

As regards the yield of cotton it will vary from district to district and villages to villages. I examined the villages of Bardoli Taluka. In the two villages of Ucchrel and Wadhvania I noticed that in case of good cultivators like Kanbis or Anavils the yield per acre of Kapas would be about 10 maunds but in case of the average cultivator it was 7 to 8 maunds per acre. The price of cotton had considerably gone up during the war and it was Rs. 600 per Bombay Khandy of 784 lbs. of cotton lint in 1918. It subsequently went down but to-day it will be about 360. The price which the cultivator gets to-day for his kapas is 7 to 8 rupees per manud of 40 lbs. or about 56 rupees from the yield of one acre in case of the average cultivator.

The expenses of cotton cultivation in these two villages were about 25 rupees per acre, including the assessment. It

1. Report of the Indian Cotton Committee. 2 Vols.

is always difficult to calculate these expenses and they vary so much with farmer to farmer. The cultivators never keep any account.

	Rs.
Digging the stalks	0–12–0
One ploughing before the rains	1– 8–0
Manuring once in three years	5– 0–0
Seeds, 16 lbs.	0–12–0
Sowing	1– 0–0
Weeding	4– 8–0
Interculture	3– 8–0
Ploughing with a light plough in September	1– 8–0
Two harrowings	2– 0–0
Picking cotton	3–12–0
Carting it to ginning factory	0–12–0
	25–0–0

The wages of picking cotton were 6 annas per maund in the two villages which I visited, while for weeding they were paid at the rate of 8 annas to 10 annas a day.

Next to cotton the most important crops in South Gujarat is Juwar. It is the staple grain crop of the black soil. Juwar is seldom sown alone. There is always a subordinate mixture of pulses like Tuver, Magh or Udad. The yield of Juwar grain in the two villages of Surat district which I visited was about 600 lbs. per acre or 10 maunds per bigha. Besides the Juwar grain the stalks of Juwar are used for fodder. An acre of land will give about 400 bundles of Juwar stalks or Kadbi. The subordinate mixture of Juwar will be about 2 maunds. An acre of land will yield Juwar worth 30 Rupees, Kadab worth 3-0-0, straw 2–8–0– and tuver worth Rs. 4. The expenses of cultivation in the two villages of Wadhvania and Ucchrel were

		Rs.
April	Digging and collecting cotton stalks...	1-8-0
	Harrowing once with Karab... ...	1-0-0
May	Second turn	1-0-0
	Collecting and burning roots of cotton	1-4-0
June	Ploughing with lightplough ...	1-8-0
	Harrowing.	0-12-0
July	Sowing and covering the seeds. ...	1-0-0
	Cost of seeds	0-12-0
	Hand weeding	3-8-0
	Interculture	1-0-0
	Watching	3-0-0
	Harvesting Juwar	2-8-0
	&	
	Carting it to the threshing floor ...	1-0-0
	Threshing and winnowing... ...	2-0-0
	Harvesting and threshing Tuver ...	1-8-0
		23- 4- 0

Corresponding to Juwar, the most important crop in North Gujarat, particularly in Kaira district, is Bajra. Bajri does best when the climate is moderately dry, and when the monsoon rain comes in light down pour and there is plenty of Sunshine between the showers. It is suitable for light soils. With Bajri there is always the subordinate mixture of Mag, Udad and Guwar. Bajri is rotated with Kodra and Sundhia Juwar. The yield of Bajri per acre was 10 maunds in the village of Nisraya and Bodal in Borsad Taluka, Kaira district. The value of yield including straw and the subordinate crops was Rs. 42 per acre.

The expenses for cultivation were as follows :-

Manure 5 cart loads per acre ...	... 5-0-0
Carting and dumping it	... 1-8-0
Two harrowings and one turn of Samar	... 2-0-0
Sowing and covering seeds	... 1-0-0
Cost of seed	...0-12-0
Hand weeding	... 3-0-0
Bullock-hoeing	...0-12-0
Ploughing between rows	... 1-8-0
Watching	... 2-8-0
Threshing and winnowing	... 3-8-0
Cutting and carting	... 2-8-0
	24- 0- 0

Rice is another important crop of Gujarat though it does not play such an important part as it does in the Konkan and Thana districts. Rice is chiefly a kharif crop dependent mostly upon natural rainfall. In the Northern talukas of Surat and the other Gujarat districts, the rainfall is lighter than in the Konkan. In these districts rice beds occupy position especially favourable for impounding rain water. The beds are not only embanked but in some cases dug out to improve their capacity for holding water.

In Gujrat rice is usually grown with the help of a tank or some other source of irrigation. Rice is grown year after year on the same land without rotation. In the years of favourable late rainfall a second crop of Val or Castor is grown. In the Surat villages which I visited I noticed that rice was the only crop commonly grown that was manured. The yield of rice in the villages of Ucchrel and Wadhwania was on the average 35 Surat maunds or 1,400 lbs. The total money value from an acre of rice land is Rs. 52-8-0 for Dangar or

unnusked rice, 8 maunds Val 10-0-0, straw Rs. 10 and Val gotar Rs. 10 or about Rs. 82-8-0. In Surat district the rice is transplanted while in the other parts of Gujarat it is sown.

The expenses of rice cultivation :—

Manure, 12 Gallis per acre	...12-0-0
Preparing seed beds	... 3-0-0
Cost of seed (rice and Val)	... 3-8-0
Ploughing and puddling Kyari ...	... 6-0-0
Transplanting	... 2-8-0
Weeding	... 1-8-0
Cutting	... 2-0-0
Binding	... 2-0-0
Carting	... 2-0-0
Clearing the Kyari and sowing Val ...	... 4-0-0
Cutting and carting Val	... 2-0-0
	40- 8- 0

Sugar cane which at one time was widely grown in Surat district is being neglected owing to the difficulty of getting an adequate water supply.

The other important crop of North Gujarat is Tobacco particularly in Kaira district. In the two villages of Nisraya and Bodal of Borsad Taluka tobacco was extensively grown. The total area under tobacco cultivation has gone up from 30,000 to 50,000 during last ten years. In Kaira, there are a large number of wells with salt water which is supposed to be very favourable to the growth of tobacco. It is believed to have wonderful manurial properties. Tobacco is rarely rotated with other crops in Gujarat. The types of tobacco commonly made in Gujarat are known as Kalio and Jerdo. Kalio is used for smoking in the hookah. The Desais of Nadiad

made several experiments to produce tobacco for the manufacture of cigars for European market. The process of curing is perhaps defective in Gujarat and that may have been responsible for the failure of these experiments. In the two villages of Borsad Taluka which I visited, the tobacco was grown without irrigation. The yield per acre amounted to 16 mds. of 40 lbs. or 640 lbs. The price of tobacco this year is Rs. 8 per maund and the total value of the yield of tobacco from one acre would be, therefore, Rs. 128. The expenses would be

15 cart loads of manure	18–12–0
Carting and dumping	3– 4–0
5 times ploughing and 9 times harrowing	19– 0–0
Planting	3– 0–0
Pilans or Topping	4– 0–0
Cutting and binding them in bundles	2– 8–0
	50– 8–0

I have mentioned only the principal crops. Crops like wheat, Kodra and Bavta and vegetables and garden crops have been omitted. Wheat is largely confined to North Gujarat, while vegetable gardening predominates near big cities where there are marketing facilities. The growing of fruits is getting more popular. Amongst the fruits, the most commonly grown are pappiyas, plantains, chicoos, guavas, and "bors" and mangoes. Lemons and pomegranates are also grown. The area under cultivation of vegetables and orchard produce was over 20,000 acres in 1891 but to-day it has gone up to 90,000 acres. If farming is to be turned into a paying industry, the only solution for the farmer is to devote larger and larger areas to production of garden produce where irrigation facilities are available and there are marketing facilities. A rough estimate could be made of Gujarat's annual income from agricultural produce from the following figures:

*1926-27**

	Area Acres.	Outturn Tons.	Value Rs.
Rice	362,643	186,785	2,09,19,920
Wheat	319,230	64,737	90,63,180
Juwar	641,053	149,618	1,67,57,216
Bajri	391,090	94,167	1,28,83,380
Maize	154,802	65,544	54,95,696
Other cereals	227,697	102,162	85,81,608
Pulses	369,119	68,191	96,46,740
Oil-seeds	189,563	31,594	69,67,056
Condiments and spices ...	8,941	...	...
Sugarcane	2,230	2,230	6,24,400
Cotton	947,776	9,477,760 Mds.	6,63,44,320
Tobacco	40,415	13,471	60,35,008
Fodder	644,263	...	96,64,945
Fruits and vegetables ...	19,266	...	19,26,600
			17,42,85,669

This does not include the income from milk and ghee nor does it include the income from the straws of cereal grains. The total number of milch animals in Gujarat according to the latest census was 628,056. The average yield of milk per year would be 600 lbs. per each animal. If we calculate the price at one anna a pound, the income from milk would be about $2\frac{1}{2}$ crores.

It would be interesting to compare the agricultural production of Gujarat with that of Italy. Such comparisons

* Season and Crop Report, Bombay Presidency, 1926-27 (It gives only the outturn of cereal and pulses.)

are beset with difficulties, because of differences in climates, soil and amount of labour and capital employed in production.

Italy has within a small area wide diversity of soil, elevation, rainfall and temperature. It has a varied agriculture. In the Alpine district of Venetia and Lombardy and in Piedmont Stock breeding and forestry industries are pursued on lines not unlike those of Switzerland. In the irrigated Valley of the Po, the farming is of the most progressive type of North Europe. In Tuscany, wheat is grown between rows of vines festooned from branch to branch of willow trees, which act as their props and the fruit trees are scattered about in the fields and the hill sides are utilised for olive groves. Rye and oats are grown in the North, while rice is the important crop in Lombardy. In the South, near Naples and all along the Coast, there is intensive fruit culture while on the big estates of Sicily and the South there is the extensive type of cereal cultivation.

Professor Bordiga [1] estimates the net income from each hectare of land, cultivated in Italy in 1925, as follows :—

	Cross income per hectare.	Labour expenses.	Other expenses.	Net Income.
	Lire.	Lire.	Lire.	Lire.
South Italy–Pasture	400	90	50	225
South Italy–Arable	1,209	400	125	375
Irrigated Lombardy	5,000	1,500	1,200	1,300– 1,500
Campania–Vegetables	12,000–15,000	4,000–5,000	4,000–4,500	3,000– 4,000
Campania–Citrus fruits	12,000–20,000	4,000–5,000	2,000–2,500	5,000–10,000

1) Trattato di Economica Rurale, p. 14.

The annual agricultural wealth of Italy, according to the average prices from 1920 to 1929 has been calculated at 35,706 million Lire [2] and the total cultivated area was 70 million Lire (28 million hectares). The production came to 500 Lire per acre. The number of people employed in agriculture was approximately 10 millions. The production per head, therefore, would be 3,570 Lire (Rs. 510.)

In Gujarat, the total annual agricultural wealth would be about 18 crores and the cultivated area about 4½ million acres. The production per acre would be 40 Rupees. The number of people actually employed in agriculture was approximately 700,000. The production per head would be Rs. 257

Such estimates are to a very large extent unreliable. One must take into account the fluctuations in prices; but there is no other method of comparison. If we take the volume of production, comparison would become still more difficult. Gujarat produces very largely Juwar and Cotton; Italy produces wheat, maize and fruits, vines and olives, and forage crops, to a very large extent. There is no other way of comparing quintals of grapes and olives with bales of cotton than by converting them into their money value at a particular time.

In my comparison, I have, therefore, selected the area which resembles Gujarat as closely as possible as regards the type of cultivation.

The commune of Cassino has an area of 8000 hectares. It is in the province of Latium and just on the border of Campania. The typical farms there are of 15–25 acres. They are cultivated by the families of metayers.

Each family takes up a farm of the size which its working members can cultivate without the help of outside labour and which will keep them engaged throughout the year. There are very few irrigation facilities nor are expensive labour saving machines used on a large scale. We will

2) 1 Rupee = 6·8 Lire.

examine the income from this farm for comparison with the farm of the same size in Gujarat. The area of the farm was $22\frac{1}{2}$ acres. 7 acres were cultivated with wheat, 7 with maize, 5 with fodder crops and $3\frac{1}{2}$ with vegetables. The total yield was as follows :—

					Value.
30	Quintals of wheat	=	30 ×	125 Lire	= 3750
30	Quintals of maize	=	30 ×	115	= 3450
100	Quintals of fodder crop	=	100 ×	40	= 4000
4000	Lira vegetables				4000
					15200 Lira

Besides this, the income from the farm was supplemented by the sale of milk from 3 cows and the eggs laid by the poultry. This income was as follows :—

L.	6000	Milk.
„	1200	Calves.
„	1000	Eggs.
„	8200	

The total income from the farm was 23400 Lire.

It is difficult to calculate the expenses as the farm was cultivated by the labour of the members of the family, but the following figures will give an appreciable idea of the expenses incurred on this farm :

	Expenses shared by the owner and metayer.
Phosphates, Sulph Ammonia, Fungicides.	1000 Li.
Seeds	600 Lire

Fodder and litter	3000 L.	(Expenses by the owner.)

The implements used on the farm were

A sowing machine	1100	Li.
2 ploughs	1500	„
2 Harrows	500	„
1 Rake	1750	„
1 Cart	1750	„
	6600	

Their depreciation charge and interest would work out at 1000 Lire. The live stock on the farm consisted of

3 milch cows	Value 12000	Li.
2 bullocks	10000	Li.
1 small horse	2000	Li.
40 poultry	300	Li.
	24500	

The interest and depreciation charges on live stock would be about 2000 L. The labour expenses were difficult to calculate but the share which went to the metayer's family was in return for their labour and that amounted to about 11,000 L. The family of the Metayer consisted of five male working members and 3 women workers.

The total expenses were

L	1600	Seeds and manure.	
„	1000	Depreciation and interest on implements.	
„	2000	„ „ „ live stock.	
„	11000	Labour charges.	
	2000	Taxes	
	17600		
	4000	Interest on the value of land per Hectare.	8000
	21609		
L	1800	Profits.	

We take now a typical farm of the village of Wadhwania in Surat district and another from Borsad Taluka of Kaira district and examine the incomes from these farms. The area of the farm from Wadhwania is 18 acres out of which 7 were occupied by cotton, 5¼ by Juwar, 2¼ Kyari, 3½ grass. The income from the farm was

	Value Rs.
Cotton 10 mds. per acre or 70 mds.	490
Juwar 15 mds. per acre or 78 mds.	195
Tuver 4 mds. per acre or 21 mds.	52– 8
Juwar Kadab per acre, 300 pulas or 1575 pulas.	15–12
Straw or Gotar	10
Rice, 30 mds. per acre or 67½ mds.	100
Val 8 mds. per acre or 20 mds.	35
Straw and wal gotar	20
Grass 2000 pulas per acre or 7000 pulas	63
	981–4

The cultivator had two buffaloes and the milk which they yielded was converted into ghee. The total amount of ghee was 8 mds. at Rs. 42 per maund or Rs. 336. The income from the farm was thus Rs. 1317–4–0.

The expenses were Rs. 160 for maintaining bullocks; Rs. 100 for two buffaloes; Rs. 150 for maintaining a permanent farm labourer or Hali. Labour charges amounted to Rs. 150, seeds and manure Rs. 100. The value of implements used on the farm was, including a cart which costs Rs. 150, about Rs. 250. The value of the live stock was Rs. 400 for a pair of bullocks and Rs. 160 for the buffaloes. The depreciation and interest charges on live stock, implements and Dubla came to about Rs. 100. The total expenses were :—

260 for bullocks and buffaloes.
150 for Hali.
100 for interest and depreciation of live stock and implements.
150 for labour charges.
100 for seed and manure.

760
90 assessment

850
400 interest on land 6%

1250

The cultivator's net profit is Rs. 67.

1 Rupee = approx. 7 Lire.
we have, therefore.

	Cassino.		Surat Farm.
	Lire.	Rs.	Rs.
Gross produce	23,400	3,343	1,317
Produce per acre	...	148	73
Value of implements ...	6,600	943	250
Value of Stock	24,500	3,500	560
Net income available for wages and earnings of cultivators.	11,000	1,575	367

CHAPTER V.

Agriculture and subsidiary occupations.

There are two points of view from which the question of subsidiary occupations in Gujarat can be looked.

The one is the necessity of creating a greater diversity of occupation in Gujarat. In Gujarat 601 persons per every thousand are maintained by agriculture and there are more people on the land than are necessary for its efficient exploitation. The other and more important point of view is the necessity of giving some subsidiary employment to the cultivators in Gujarat, who, owing to the small size of their holdings and absence of irrigation facilities are not kept employed throughout the year. The problem is to provide them with work during their leisure hours and to enable them to supplement their income from the land.

The first question can be summarily dismissed here. The Famine Commission of 1880 while commenting upon the disastrous effects of the famines on Indian population remarked[2] " The main cause of the disastrous consequences of Indian famines and one of the greatest difficulties in way of providing relief in an effectual shape, is to be found in the fact that the great mass of the population directly depends on agriculture and that there is no other industry from which any considerable part of the community derives its support. The failure of the usual rain deprives the labouring class as a whole not only of the ordinary supplies of food obtainable at prices within their reach, but also of the sole employment by which

1 Census Report 191.

2 Famine Commission report of 1880.

they can earn the means of procuring it. The complete remedy for this condition of things will be found only in the development of industries other than agriculture and independent of the fluctuations of the seasons. With a population so dense as of India, these considerations are of the greatest weight and they are rendered still more serious by the fact that the members who have no other employment than the agriculture are in large parts of the country greatly in excess of what is really required for the thorough cultivation of the land. So far as this is the case, the result must be that the part of the population which is in excess of the requirements of the agriculture eats up the profits that would otherwise spring from the industry of the community. It is not surprising that in a country thus situated material progress is low." In England, for example, on every 1000 acres of land, there are only 37 men and 3 women, in Denmark 48½ men and 8½ women,[1] while there are in Gujarat 100 men and 60 women. Even in Italy, where again there is a great pressure of population on land, there are only 88 men 48 women employed on 1000 acres of cultivated land. According to the Census of 1921 there were in Italy

2,292,308	men	A Farmers cultivating their own lands.
1.135,214	women	
25,774	men	B Farmers who are tenants on long lease.
9,772	women	
485,602	men	C Tenant farmers paying cash rent.
172,576	women	
1,088,970	men	D Farming on crop share basis.
501,006	women	
2.770,897	men	Agricultural labourers.
1,236,826	women	
10,202,213	Total.	

1 Journal of London Statistical Society 1926 Article by Mr. Thompson.

The total area of land under cultivation in Italy is approximately 70 millions acres. There are 4½ million acres of land under cultivation in Gujarat.[1] There are 205,000 cultivating owners, 102,000 cultivating tenants and 115,000 agricultural labourers among men while there are 39000 cultivating owners, 14000 cultivating tenants and 201,000 agricultural labourers among women. The land in Gujarat does not only maintain these actual workers and their dependants, but also it has to support 30,000 land lords and their dependents. It is not possible, however efficient the methods of the Gujarat cultivators may be to live in comfort on the produce of the land unless the number of those who live solely on the land is considerably reduced. There is no problem of more vital importance in Gujarat than the growth of industries which can absorb a part of this large population subsisting exclusively on land.

The statistics of occupation in the Bombay Presidency Census report of 1921 show that the industries in Gujarat maintain about 159 persons in every 1000, while trade and transport maintain 82 persons; 26, 14 and 5 get their living out of professions and liberal arts, public administration and public forces respectively. Only 5 out of 1000 live on in dependent incomes while 9 are unproductive and 56 without any definite occupation and 16 are employed in domestic service. Of the Industries which support 465,615 persons, the actual workers are 155,525 males and 52,017 females. Of these industrial workers, the greatest number is employed in textile industries and chiefly in the cotton industry. Textile industries maintained 185,050 persons of whom 66,329 males and 26,254 females were actual workers. The factory workers numbered 471820, while 15,489 worked in their own homes or cottages.

Improvement in means of communication brought India into close touch with the products of the organised industries of the West and as it happened every where the village rural industries suffered severely from the competition of cheap

1 Census Report 1921.

products of organised industries. In England, for example, the village blacksmith was very badly hit. Attempts are being made in England to revive the rural industries. A survey of rural industries in some parts of England was made by research students at the School of Rural Economy, Oxford. The Ministry of Agriculture and Fisheries was authorised to pay expenses incurred by country agricultural committees in making enquiries for the purpose of formulating schemes for the development of rural industries and social life in rural places, and in a number of counties rural industries sub-committees were set up to conduct such inquiries. Soon afterwards the Development Commissioners obtained a report on industries in rural areas and set up a rural Industries Intelligence Bureau with the object of providing skilled advice to those who are engaged in or who contemplated the establishment of a commercially profitable rural industry. At the same time a Co-operative trading Society was set up to supply workers engaged in rural industries with raw materials at whole sale prices and to provide a selling organization for the products of their work. In London there is a Rural Industries Bureau under the charge of Colonel Little. He was good enough to show me the work which the bureau was doing for rural industries. It tried to secure orders for rural workers and it had a room in London for exhibiting their work. The idea underlying the establishment of the rural bureau was to create marketing facilities. There are Rural Community Councils now in many of the counties who work for the development of rural industries.[1]

In Gujarat villages, I was told that some of the old village industries were dying. In Surat district I was told that the potters who at one time used to make the common country tiles for the roofs of the village houses found that there is no longer the same demand for these tiles as the people prefer to use the "Mangalore tiles". The demand for Earthern Jars for storing grain has fallen off as people prefer to have tin jars.

1 The Ministry of Agriculture & Fisheries. Sir Francis Floud pp. 194-198.

Hand-loom weaving is still the only village industry which has not yet succumbed owing to the competition of machine made goods. The output of the hand looms is almost equal to that of the local power looms and more than 25 p. c. of the cloth consumed in Gujarat is still supplied by hand loom weaving. In Gujarat weaving is done by Dheds or depressed classes. They still use old fashioned defective shuttles and they suffer from want of finance. The co-operative department started a weaving school sometimes ago and demonstrations were carried on by the Department for the spread of the use of improved types of hand loom. This work is now transferred to the Department of Industries which is also running a few weaving schools. The most important practical question in case of hand loom weaving industry is the creation of marketing facilities and the provision of finances at a reasonable rate of interest. The only department that can tackle this question is therefore the Co-operative department. Old industries like dyeing, and calico printing, glass-blowing, gold and silver thread work and manufacture of Kinkhab [1] and the making of Chundaries are not as prosperous as in the past. The change in tastes and foreign competition are responsible for this. Gujarat is well known for its chundaris, but the foreign Sadis are displacing Chundaris and this artistic home industry is not so well patronised as in the past. Surat and Ahmedabad were well known for the manufacture of Kinkhab or Silk Brocade and the Indian State and particularly the Gaekwads of Baroda used to buy every year Kinkhab worth several lakhs, but the changes of taste in the Indian Courts have hit this famous industry of Surat and Ahmedabad also. The Kinkhab work consists of the weaving of gold into a silk foundation. There are many patterns of exquisite beauty and they have enduring artistic value and the work is in many respects unique. The beautiful blown glass made by craftsmen in Kapadvanj in Kaira district has become extinct. This is the most regrettable incident as the glass turned out by the craftsmen

1 Silk Brocade.

was comparable to the Venetian glass. The old industry of making glass bangles is also dying out owing to the imports of cheap bangles from Japan and Austria.

In England and America attempts are made to revive rural life and to encourage agricultural industry. It is believed that "a population dependent entirely upon manufactures gives rise to an unstable state, subject to comparatively violent fluctuations of employment from causes which are liable to affect all industries simultaneously. An agricultural community along side the industrial one serves as a reservoir for labour, absorbing the fluctuations because its own variations depend upon different factors and so equalising the demand[1]." In Gujarat just for the opposite reasons it is necessary to create occupations which do not depend entirely upon agriculture. It must be confessed that year of famine which affect the agriculturists are bound to react on other industries also, because famines deprive the bulk of the people of the purchasing power and it was observed in the past that in the years of famine the artisans and craftsmen were the first to suffer. If the industries which can command foreign markets are established, they will partially succeed in creating work which will not depend upon the same local vagaries of the season like agriculture.

We are more concerned here, however, with the problem of providing for the agriculturists during slack season or whenever they have leisure some subsidiary occupations which would give them additional income. In Gujarat the bulk of the holdings and the actual units of cultivation are in many cases below 10 acres. A small holding of 10 acres, especially, if it is Jirayat or dry holding would hardly keep the cultivator employed for more than five or six months in the year. If his holding consists of Kyari or Bagayat land with irrigation facilities, it would keep him occupied throughout the year. After he harvests the Juwar, he has still to wait for cutting his Tuver crop and in case of Kyari land he usually takes a second crop of Val or Castor which would

1 Hall "Agriculture after the War" Page 15.

keep him busy till March. In Surat villages as well as the villages of Kaira district, I noticed that where the holdings consisted Jirayat land and were below 15 acres there was very little work after November. In March the cultivator would be busy for a few days in picking his cotton but on the whole he has very little work from November till April. In the two villages of Wadhwania and Ucchrel, I noticed that the cultivators spent their time in idle gossip during this period. In the two villages of Kaira district Nisraya and Bodal I was told that they made "bidis" or cigarettes and their average earnings came to Rs. 10 a month. If a suitable subsidiary occupation just near their home was found for them it would be a great assistance to them in supplementing their income.

In one village near Udwada, Pardi district, there is a big quarry and baskets are required to carry the stones dug out of the quarry. Basket making as a subsidiary occupation would be very paying here and as a matter of fact baskets are made in the village. There is a small school in the village with agricultural and industrial bias and the boys are taught now to make cane baskets and even furniture. In the case of furniture there is a difficulty in marketing it.

The question of subsidiary occupations is very often talked about without a proper knowledge of the whole situation. It is believed that any subsidiary industries can be started in a village and that they will keep the cultivators occupied when they have no work. As a matter of fact many of the industries require a special training. Not every agriculturist can join a new industry without previous experience and training. The cultivator's work again is of a very intermittent nature. He cannot leave his field and go and work in another industry during leisure period. His presence on the field is necessary though he may have no work. Programme of a cultivator's work in Kaira district will give the reader an idea of his work. In case of this cultivator, he has irrigation facilities and therefore he is practically busy through out the year though sometimes during the season he may have very little work.

May	—	Manuring, clearing head lands and wire fencing removing the stubbles of cotton, etc.
June	—	After rains, begin ploughing, harrowing sowing Kodra, Bajri or cotton.
July	—	Planting rice seedlings and Juwar on Jirayat fields and weeding or interculturing crops sown in June.
August	—	Weeding and interculturing.
September–		Cutting Bajri and Juwar.
October	—	Harvesting rice, bajri.
November–		Sowing Rabi wheat and gram.
December–		Harvesting Guwar, Math, Mag, Udad, and irrigating wheat.
January	—	Irrigating wheat, picking first crop of tuver.
February—		Irrigating wheat and picking cotton.
March	—	Harvesting wheat, gram and last picking of tuver.
April	—	Last picking of cotton.

This is an example of an irrigated holding. If there are no irrigation facilities–the ryot will have no work or very little after November and a subsidiary occupation would be a real benefit to him. In Italy I noticed at least in the Commune of Cassino that every metayer tried to take up a holding which would keep him and the members of his family busy throughout the year. In Central Italy the peasants reserve a small portion of their holding for growing flax for making clothes. Some of the cultivators who had very small holdings worked as casual labourers. The Fascist policy is to start public works during the slack season which afford employment to the peasants. Poultry keeping was another important subsidiary industry throughout Italy and almost all cultivators supplemented their income from their holdings by selling eggs. Dairy industry considerably added to their incomes. In Switzerland, I noticed the same thing. Poultry farming and dairy industry were important subsidiary industries of agriculture. Toy making and embroidery were also important subsidiary industries in Switzerland.

In case of subsidiary occupations the question is of providing the cultivators with work near their homes. The work should be of a nature which can be easily learnt by them. If we take the case of Japanese cultivators, the bulk of their holdings have an area of less than one cho (2·4 acres).

Although, the cultivation is eminently intensive and the requirements of the rural Japanese population are small, it is not to be expected that the net yield of a farm of less than $2\frac{1}{2}$ acres can by itself be sufficient for the support of families as large, as those of the Japanese farmers. This simple fact is sufficient to give an idea of the importance of secondary agricultural industries and consequently of the extension assumed by them in Japan. The importance of these subsidiary industries is naturally the greatest in those provinces in which the subdivision of agricultural land is greatest. It is generally held that the yield of these secondary industries in Japan varies between 10 and 25 p.c. of that of agriculture pure and simple. The secondary industries, carried on by the Japanese farmers are[1] :-

1. Industries connected with seri-culture.
    a. Silk worm rearing.
    b. Spinning.
    c. Preparation of silk worm eggs.
    d. Improvement of various kinds of silk worm.
2. Gardening.
    a. Cultivation of fruit trees.
    b. Cultivation of vegetables and green stuff.
    c. Preparation of preserves and Marmalade.
    d. Cultivation of flowers.
    e. Preparation of seeds, bulbs and shoots.
3. Cultivation of special plants like tea and tobacco

1. Bulletin of Social and Economic intelligence International Institute of Agriculture, Rome. March 1913 pp. 114.

4. a. Industries in relation to the various classes of live stock improvement like improvement of horned cattle, horses, pigs and sheep.

   b. Treatment of the secondary produce of live stock like butter, milk and dairy produce, saltmeat and bacon.

   c. Poultry improvement.

   d. Bee keeping.

5. Special small industries and manufactures.

6. Fishing and industries connected with it.

Every family in Japan on the average makes 115 yens from silk worm rearing. Deducting the expenses, the net return comes to about Rs. 120 a year, which is an increase of 35 p.c. of the average income of the Japanese household.

There is a considerable scope in Gujarat for some of these subsidiary occupations. Religious prejudices, however, come in the way of some of the occupations which would subsequently increase the incomes of the Gujarat cultivators. Seri-culture or poultry rearing or pig rearing will not appeal to the Gujarat cultivators as they involve taking of the animal life. In 1837, under Dr. Burns, a Government garden was established at Kaira. Experiments were made in the growth of Mulberry trees and in the rearing of silk worms. They were fairly successful but the people of the district, from their dislike of destroying the worms took no interest in the industry and the garden was finally closed in 1847.[1] The only alternatives left for them are dairy industries, spinning and weaving of yarn, growing of fruits and vegetables, small cottage industries like toy-making or manufacture of baskets, ropes and embrodiery making preserves of fruits like mangoes, lemons, guavas. In Gujarat the Hindu farmers would never undertake poultry rearing, though the lower castes of Hindus like Waghris, or Bhils might be encouraged to undertake it. Embroidery would certainly be a source of good

1. Campbell's Gazetters of Bombay Presidency Vol. III p. 54.

supplementary income for the cultivating families if the women systematically undertook that line of work. The difficulty about embroidery lies in finding out a suitable market for them. Similarly in the case of small cottage industries like toy-making the most important question is finding a suitable market. The co-operative movement can render great assistance in marketing such articles and providing the necessary capital and the implements. The whole question of cottage industries requires careful investigation. Most of the cottage industries however, would require skilled labour and cannot in any way be looked upon as a source of supplementary or subsidiary sources of occupation for the cultivating population which have no work or very little work on their fields during slack season. The advocates of the spinning wheel suggest that spinnig is the most suitable, easy and convenient subsidiary occupation. It does not require any special skill, nor any large captial and that it is a rural seasonal industry applicable to a poor country and a large population which is not only poor and half starved but also uneducated, having practically no opportunities for acquiring special skill or knowledge. The spinning wheel provides the cultivator's family with work in their own homes in the villages. The admirers of the spinning wheel even claim that it can substantially increase the income of the cultivators. From experience, they maintain that the average earnings of the spinner per week range from eight to ten annas.[1] If it is done only during off seasons the annual earnings of the spinning home may not exceed Rs. 20 to Rs. 25 a year per spindle. But this would represent a fairly substantial addition to its slender income. An investigation in the villages of South of India showed the following interesting results.

1. Hand Spinning & Hand weaving (published by the All India Spinners' Association, Ahmedabad,

Name of village.	Number of wheels.	Annual earning from spinning Rs.	Annual agricultural incomes of the families Rs.	Percentage of 3 to 4.
PUPULALAYAM AREA.				
1 Upperpapulaiyam ...	25	460	3,360	12 p. c.
2 Sembampialayam ...	29	450	3,065	15 p. c.
3 Puliayampatti ...	20	346	2,650	14 p. c.
4 Chithalandur	25	375	2,150	17½ p. c.
5 Pudupalayam ...	25	336	2,398	14 p. c.

Even if this estimate is an exaggeration it must be conceded that in absence of any other suitable subsidiary occupation, any occupation that goes to add, however little, to the meagre income of the agriculturists, must be welcome.

The most important subsidiary industry in case of Gujarat however is the dairy. Almost all cultivators and even some agricultural labourers keep one, two or more buffaloes. There were in 1926, 113,000 milch buffaloes in Kaira, 100,000 in Ahmedabad and 54,000 in Surat or approximately there was one milch buffalo per 7·3 acres of cultivated land in Kaira, and 14 acres of cultivated land in Ahmedabad and Surat. These centres compare quite favourably even with Denmark which has one cow for six acres.[2] Northern Gujarat and particularly Kaira district, has great possibilities as far as the development of the dairy industry is concerned.

Gujarat cattle on the average may be taken to produce 2000 lbs. of milk per head per year. The total number of milch cattle throughout Gujarat would be over 300,000. There is a great demand for milk in Gujarat and Bombay. There is no part of India where milk is so widely consumed as in Gujarat. A pound of milk easily fetches from 2 to 4 annas

2. Mr. Patel's Evidence before the Royal Agricultural Commission 1926. Vol II part I.

in the cities. The three main products of the dairy produce (1) Milk, (2) Butter, (3) Ghee would easily add considerably to the incomes of the cultivators in Gujarat, if the whole industry was properly organised. The supply of milk to cities and towns is undertaken largely by middlemen. They adulterate the milk, and the Consumers get a decidedly inferior quality of milk, while the farmers do not get the full value of their milk.

The transport facilities should be improved. Refrigerating cars should be attached to the trains and special fast trains should run within 200 miles of big consuming centres. Unless the railways co-operate the question of the supply of milk to cities will not be satisfactorily solved. I noticed in all the four villages of Gujarat which I examined that the milk which would fetch higher price when sold as milk was converted into ghee in Surat villages and in Kaira villages was sold to the owners of cream separators to be eventually turned into butter. The Surat villages were less than 30 miles from Surat but owing to the absence of transport facilities the milk could not be sent to Surat.

From the evidence before the Royal Agricultural Commission, it can be gathered that the milk trade of the big cities like Bombay results in the deterioration of the cattle and leads them eventually to the slaughter houses. The milch buffaloes are brought to Bombay and kept for a year or 18 months and as soon as they cease to yield a good supply of milk are sold to the butchers. To prevent this we should produce milk in the district.

If the dairy industry was co-operatively organized the farmers would get better prices and the consumers get the better quality of the milk. In Charrotar now, in many of the villages, there are cream separators and the cream after being separated is exported to Bombay and Ahmedabad where it is manufactured in butter. At one time Indian butter was exported to Ceylon, Japan and Strait Settlements but now the Australian butter has[1] taken its place. If the farmers combine and start co-operative dairy societies which separate the cream from the milk and manufacture the butter, they

1. Bruen's Evidence before the Royal Agricultural Commission 1927 pp. 418 Vol. II. Part I.

will retain the profit which is now taken away by the middlemen. Gujarat is well known for the manufacture of ghee and it is exported to the leading cities of Gujarat from villages.

In the two Surat villages I was given to understand that in many cases the cultivators found that their expenses of cultivation were more than the income from their holdings. If they had two buffaloes the income from ghee enabled them to make up their losses in cultivation and to have a small profit. I am quoting the example of a cultivator in the village of Wadhawania, who had two buffaloes. 6 maunds of ghee were turned out of the milk which these buffaloes yielded and the value of the ghee was Rs. 255. The value of the farm yard manure supplied by the buffaloes was Rs. 50. The expenses for the upkeep of the buffaloes were Rs. 112-8-0. If he did not have the buffaloes he was losing Rs. 105 from the cultivation of his farm of 12 acres. The income from ghee turned his loss into a profit of Rs. 78.

The growing of fruits is neglected to a certain extent in Gujarat. It must be admitted that the market for fruits in Gujarat is extremely limited but constant advertising may create tastes for articles which are now neglected. In U. S. A. the Californian fruit associations have within the last few years by constant advertising brought about a great increase in the consumption of fruits. In England also advertisements like "Eat more fruit" have resulted within last two or three years of greater consumption of fruits. The chief fruits of Gujarat are :—mangoes, plantains, papiyas, the guavas, pine apples, lime, custard apples, melon and chikus and small fruits like Jambus and bore. Better and quicker transport facilities would considerably widen their markets. Power industries on a small scale for utilising agricultural products like oil pressing, sugar making, cotton ginning and rice hulling would offer useful subsidiary means of occupation. Utilisation of cotton seeds for felt and of rice straw for paper should be tried. Attempts are made to introduce fruit canning also. No systematic and successful attempts however have yet been made to encourage subsidiary occupations in Gujarat.

CHAPTER VI.

"Agricultural Labour."

If we examine the population of Gujarat villages, we will find that it consists of a small number of people belonging to Ujli paraj castes and a large number of people belonging to backward or Kali paraj castes. Just entering a typical Gujarat village, one will find on the outskirts of the village small dilapidated huts with mud walls and thatched roofs where the Dheds and the depressed classes live. As one enters the village proper one will find substantial houses owned by the Ujli paraj castes like Anavalas and Patidars or Brahamans. The Dublas and the Kolis live in miserable huts outside the residential area of the village. The small number of Anavalas or Patidars or Bohras own most of the village lands which lie scattered round about the village. The Dublas, the Kolis and Dharelas and other castes lower in the scale than the Patidars or the Brahamans work as casual labourers or some times as permanent labourers. In some cases they may have lands of their own, but in the majority of cases they are landless and they work purely as labourers or in a few cases they take a few acres of land on lease from the high caste owners of land.

The agricultural labour is mostly drawn from these inferior castes of people in the village. In the Surat district the most important classes from which agricultural labourers are drawn are Chodhras, Dhodias and Dublas.

It is from these classes that "Halis" or permanent farm labourers are drawn. The "Halis" are agricultural labourers who do not work for wages at their own convenience but are maintained hereditarily as permanent estate servants by the larger landlords, who provide them also with home and food.

They cannot resign and seek occupation elsewhere. There is virtually no difference between the position of these Halis and the slaves of the American plantation prior to the Civil War — except that the courts would not recognise the rights of the masters as absolute over the persons and services of these people. They are free men "de Jure" but slaves "de facto." Mr. S. H. Covernton, the Collector of Broach, writes about the Hali system as follows: —

"The indentured labourers are called Halis and are usually Bhils, Talavias or members of some low caste. They receive money in advance from their employers and bind themselves by a written or oral agreement for a number of years for the re-payment of debt. They are fed and clothed by their employer and are paid two or four annas a day. As a rule they spend the advances they receive in drink, marriages or other extravagances and thereafter remain practically as bond slaves for years—probably for life, since before they have worked off one term of service they take another advance."1)

Prospects of labour in big industrial concerns such as railway workshops and textile mills have of late years diverted them from their original pursuits. They are deserting their masters and the number of Halis is distinctly getting smaller and smaller.

It is difficult to understand exactly the position of the "Halis." In the two Surat villages of Wadhawania and Ucchrel, I found on inquiry that in most cases when the Dublas borrowed money from the Ujli paraj classes they undertook to work on their land till they paid off their debts, but the Dhaniama or the master always took care to see that the money was never paid off by giving them more advances from time to time. In actual practice, therefore, these Dublas became more or less the bondsmen of "Dhaniamas." The Dhaniama provided the Dublas with food, clothing and home. The wives of the Dublas would work as domestic servants at the houses of the Dhaniama, for which they would get food

1) Census Report 1921.

and a trifling cash allowance. The Halis are not in all cases badly treated because there is the danger that they may run away and the employer will lose the money which he has advanced. Economically this system is, however, pernicious. The Dubla has no interest in his work. He works because he has to pay off his debt. The employer thinks he has got permanent supply of labour and he will not have to pay high wages during the busy season when there is a great demand for labour. The "Hali" labour in the long run, however, turns out to be more expensive than the casual labour. 40 years ago in Surat district it was possible to get a Hali by advancing Rs. 50. The advance to-day amounts to Rs. 200 to 300. The maintenance of Hali did not cost more than 40 to 50 Rupees a year about 40 years ago. To-day the expenses of maintaining a Hali come to Rs. 122 a year.

	Rupees.
A loaf of Juwar of ¾ seers a day ...	17-8-0 a year.
Rice one seer a day	27-0-0 „
Dal	11-8-0 „
Juwar 2 seers a day	45-0-0 „
Clothes and Shoes	13-0-0 „
Tobacco	8-0-0 „
	122-0-0

The Dublas, however, are now forsaking their Dhanamas. In every Surat village one hears the same story from the cultivators. They all complain of the fact that their Dublas have run away. The Dublas do not like to be bound down to one master. The rise in wages throughout the rural areas and possibilities of getting work in the industrial establishments of the cities or in the railways, have led them to abandon their masters. The bulk of agricultural labourers in Gujarat are however day labourers. They belong also to the Koli, Dharela, Bhil, Dubla and other inferior classes of Gujarat. Their wages have also considerably gone up. Before the war 3 to 4 annas a day were the usual wages of the field labourers. To-day they get as much as 8 annas and during the sowing season or harvest time they even get 10 annas.

The rise in agricultural wages has been due to demand for labour in the industrial cities and also scarcity of agricultural labour in the villages.

In many Gujarat villages, at the time of picking cotton labour is imported from Kathiawad or Marwad. A gang of labourers is brought from outside Gujarat on a definite contract. They are provided with temporary huts outside the village.

On the one hand there is a great pressure of population on the land, but on the other there is a shortage of agricultural labour, particularly, during the busy period of the agricultural season. In Gujarat there were 526,000 agricultural labourers in 1911, while in 1921, the number of agricultural labourers was reduced to 372,400. There is a steady migration of agricultural labourers from the villages to the cities. In the two Surat villages of Wadhawania and Ucchrel, I was told that in course of three years 50 Dublas absconded. If we look at the figures of factory labourers, we find a steady increase in their numbers. They were 23,000 in 1901, 29,300 in 1905, 36,200, in 1910, 58,500 in 1915 and 74,100 in 1921.

Besides this exodus of labourers from the villages, the plague and influenza reduced their numbers. The result of this reduced number has been a steady rise in wages. Mr. Findlay Shirras was asked by the Government to make inquiry into the wages of rural labour and he found that the wages had gone up considerably since 1900. 1

Gujarat (Rural area).

1900	1913	1922	1925	1926
		FIELD LABOUR.		
0-2-3	0- 3-9	0- 8-0	0-10-3	0-10-6
		ORDINARY LABOUR.		
0-2-3	0- 4-0	0- 9-3	0-10-3	0-10-6
		SKILLED LABOUR.		
0-7-3	0-11-9	1-13-6	1-15-3	1-15-9

1 Report on an Enquiry into Agricultural wages in the Bombay Presidency, 1922.

During the last 25 years there has been more than 300 p.c. rise in the money wages of field and ordinary and skilled labourers in rural areas.

It must be borne in mind that this rise in money wages is not necessarily a rise in real wages. Mr. Shirras' enquiry shows that there has been a substantial rise in real wages also as compared with 1900 and 1913. If we compare, however, the real wages of 1914 with those of 1922, we will find that the real wages have gone down in case of field and ordinary labour and slightly risen in case of skilled labourers.

The index numbers of the cost of living and the real wages were as follows:—

Year.	Index number of cost of living.	Index number of real wages		
		Field labourers.	Ordinary labourers.	Skilled labourers.
1914.	117	154	156	114
1921.	195	138	132	111
1922.	200	145	142	117

Base 1900.

If the pre-war year 1914 was taken as the base year, the index numbers of cost of the living and the real wages were as follows:—

Year.	Cost of living.	Real wages		
		Field labourer.	Ordinary labourer.	Skilled labourer.
1921.	167	90	84	98
1922.	171	94	91	102

The labourers in Gujarat begin their work at about 7 A.M. and work till 6 with an hour's interval at about 12 A.M.

There is no doubt that their condition has slightly improved. The standard of living of the village labourers has gone up but in a large number of cases this rise in wages has been accompanied by increased consumption of liquor. If we look at the excise returns only of Surat district, we find that in 1893–94, they amounted to 1,150,000 Rupees, in 1921 they went up to 2,497,348 Rupees.

We will now try and compare the conditions of Italian agricultural labourers. Just as in Gujarat, the daily labourers or casual labourers are the predominant characteristics of Italian agriculture. Such labour is largely employed on the tenant farms of Lombardy and Venetia, large estates of Latium and recently reclaimed lands of Bologna and Ravenna. Thirty years ago their condition was very bad. Their wages fluctuated round about 1 Lira or 9 annas a day. Their food consisted largely of Corn–mush and consequently they suffered from Pellagra. Emigration reduced their numbers and there was a trade union movement amongst them. Their wages have considerably gone up since then and the Italian labourers are much better off to-day. For heavy Summer work on the farm like harvesting and threshing men receive from 2 to 2·5 lire per hour or 16 to 20 lire a day. For lighter work they get about 12 to 14 lire.

The hours are fixed at a maximum of eight in Summer and in no case exceeds 10 hours. Overtime is paid at the rate of 25 p.c. to 50 p.c. above the usual wages. A Joint Commission determines the minimum number of hands to be employed on each farm. In some districts, landowners are required to undertake to employ steadily one person for every fifteen acres. The wages have gone up in the ratio of 1 to 3 compared to the pre–war rates, while the worker's share in certain provinces in the rice and beet crops which supplement the money wages has increased considerably. The higher wages of agricultural labour re–acted on other wages. Herdsmen in the province of Piacenza had the number of

dairy cows entrusted to them reduced from 12 to 10 and received.

	1914.	1918–19.
Wheat.	29·8 Bushels	39·7
Maize.	39·7	39·7
Cash.	760 L.	2,000

Besides they get a certain number of faggots, a certain amount of wine and milk.

The herdsmen are provided with a rent-free cottage and a small vegetable garden and a pig sty with the right to fatten a pig, and they may farm as much land as they can manage with the help of his family, sharing in the return in the following manner.

	1914–15.	1918–19.
For each 220 lbs. of sugar beet.	4 annas.	11 annas.
For each 220 lbs. of tomato.	11 annas.	1 Rupee 4 annas
Maize.	¼ th.	2/3rds.

Ploughmen are entrusted with the care and management of one pair of oxen only, receiving the same pay and allowance as herdsmen, without the milk allowance. In the province of Reggio Emilia the terms of employment for the ploughmen and farm labourers were as follows :—

Free lodging	100	L.
40·4 Bushels of wheat ...	825	L.
43·4 Bushels of corn	660	L.
3307 lbs. of grapes	600	
Cash	900	
Hemp, beans, wood	300	
	3,415	

In Gujarat the Hali system is bound to to disappear in time. The cultivators will find it difficult to get a steady supply of labour for their seasonal operations. If the farm labourers were given a certain share in the produce there would be a stimulus for them to remain on the land.

A comparison of the condition of permanent labourers in Italy and Gujarat would be interesting. The permanent labourers whom I saw in Lombardy seemed quite satisfied with their condition. I am laying stress on this comparison, because if we in Gujarat could adopt some such system we should go a long way towards solving the problem of a permanent labour supply on agricultural lands.

Just near Milan I visited several medium-sized farms cultivated with the assistance of permanent labourers. These are provided with houses on the farm. Each house contains a kitchen, dining room and two bed-rooms. The adult labourers between the ages of 20 and 60 are paid 2600 Lire each and 4 quintals of maize, 1 quintal of wheat, and 3 quintals of rice. They are given a small plot of land for growing vegetables, and are allowed to keep a pig and poultry. They also get a certain quantity of faggots. On the whole, their wages work out at 5000 Lire a year. In the case of women workers and workers under 20, the wage is a little lower. Wages are fixed in each province by a joint committee, and every employer is obliged to keep a contract book, in which all contracts between the employer and the labourers are properly registered.

A Note.

The complaint about a scarcity of labour is also due to the fact that there is an increasing tendency amongst the Pattidars to rely more on permanent labourers than on their own labour and the labour of the members of their families. In Charotar, for example, the Pattidar women look upon manual work on the farm as disgraceful and below their dignity. Almost every Pattidar cultivator has to have a permanent farm servant. The rise in prices during the last

twenty years and the consequent prosperity may partly be responsible for this kind of psychology; in Surat villages, however, the Kanbi women generally work on the field. In Italy, on the other hand, I noticed that every metayer tried as far as possible to cultivate his holding with the help of the members of his family, and with as little outside help as possible. .In Itlay there is generally the right balance between the farm on the one hand and the working capacity of the metayer's family.

CHAPTER VII.

Prices.

The prosperity of the rural classes very largely depends upon the prices which they get for their produce. The rise in prices, which procures for them a larger money return for their produce is thus distinctly beneficial for them. The rural classes, however, are also consumers. If there is a general rise in the prices, it adversely affects them as consumers. On one hand, that section of the rural community which works as hired labourers will gain by a rise in wages if that rise is more in proportion to the rise in cost of living but on the other hand those cultivators who engage labour, will lose by a rise in wages. The question whether the rise in prices is a benefit to the cultivators or not cannot be decided off hand without a careful analysis of all the factors in the situation.

A glance at the price statistics of some of the important commodities during the last twenty five years is enough to convince one of a steady rise in prices in India since 1900. An enquiry was made by Mr. Datta under orders from the Government about the causes of the rise in prices in India. According to Mr. Datta's analysis the rise in prices was due to (a) causes peculiar to India (b) causes which have affected the price level throughout the world. It is beyond the scope of this thesis to discuss the causes of the rise in prices. We have to deal mainly with the effects of the rise in prices on the agricultural classes in Gujarat. The growth of the population in proportion to the increase in food production and the increased demand for Indian commodities abroad and the development of the communications, banking and monetary

facilities were suggested by Mr. Datta, as possible causes of the rise in prices in India. The Indian prices were more influenced by the world prices which show a steady rise since the beginning of the 20th century. "Considering the growth of the population and the increase in the external demand, the supply has been short during the greater part of the period embraced in the enquiry. The demand for both internal consumption and exports having increased at a quicker rate than the production of food grains, it is only natural that there should be a general rise of prices in food stuffs. The food supply in India compared with the demand both internal and external reached its lowest level in the quinquennium 1905–09 and the shortage of supply has doubtlessly contributed in no small measure to the unusual rise in prices during that quinquennium. Mr. Datta's inquiry extended upto the year 1912. Since then the price level has been considerably disturbed owing to war.

How has this rise in prices affected the Indian cultivators? Mr. Datta says, "There has undoubtedly been a real progress, an increase of wealth and a general diffusion of it, in consequence of an increase in the profits of agriculture and remarkable increase in wages greater than the cost of living in almost all parts of India during the period of rising prices. It is beyond all doubt that in recent years, there has taken place with the development of the resources of the country, and the growth of enterprise on the part of the community as a whole, a very considerable increase in the annual income of the people. The standard of living amongst all classes of the population, especially among land holders, traders and ryots has increased very considerably in recent years." Mr. Datta infers the growth of prosperity consequent on the rise of prices from increase in passenger miles travelled and a rise in standard of living amongst the people. "The average villager lives in a better house and eats better food than his father. Brass and other metal vessels have taken the place of coarse earthenware and the clothing of the family in quantity and quality, has improved. Land-lords, have, except in some special cases received increased cash rents, cultivators incre-

ased profits from agriculture and wage earners generally have gained in consequence of their wages having increased more than prices."1 The import figures of tea, sugar, kerosene and piece goods which I have collected from the inland and rail-borne trade of the Bombay Presidency also bear out this view.

Import of	In Maunds.			
	1895.	1905.	1915.	1921.
Tea	1,129	3,821	12,658	22,564
Sugar	2,88,051	8,17,367	9,35,451	13,53,477
Kerosene	27,463	1,87,952	5,16,279	6,09,573
Piece goods European	30,799	82,969	1,45,378	21,624
Indian piece goods	15,212	35,725	8,532	81,649

Dr. Mann who made a careful study of two villages in Deccan is not quite so sure about the beneficial effect of rise in prices upon the rural population. In case of one village called Jategaon Budruk, the total expenditure of the villagers to enable them to lead a life according to their accepted standard of living, was a little more than the income of the village. The net deficit was Rs. 14,631. The rise in the prices and wages instead of improving their position made it worse. " So far we have been dealing with the effect of the rise of prices on the population as a whole. The matter is of special interest, however, in connection with land-holders, as it is they who would be affected by any rise in the assessment which might be proposed on account of such a rise. Let us see how this class would be affected. We have only got figures for Jategaon Budruk, but these are clear. "*

1. Datta's Report on the rise of prices in India, 5 Vols. Vol. I., pp. 184 to 186.

* H. Mann. Life and Labour in a Deccan village (2) p. 155.

		Rs.
1	Net deficiency of the landlords per annum before rise in prices.	14,631
2	Net deficiency of the land holders per annum after 50 p. c. rise of prices, but no increase in wages.	21,937
3	Net deficiency of the land holders per annum, after 50 p. c. rise in prices and in wages.	18,600

Dr. Mann, however, admits that these conclusions cannot be applied to the places where large crops of cotton, sugar or similar crops are produced for sale.

The villages which he examined were purely food producing villages. On the whole it appears that the rise in prices would only be beneficial to the cultivators, if there has been a greater rise in things which they produce while proportionately a smaller rise in things which they consume. If the cultivators are producing cotton in Gujarat and if the rise in price of cotton is more than the rise in expenses of cultivation and the rise in their cost of living, they are benefited as a class. The rise in wages on the other hand would affect them if they are employing labour but on the other hand if they work as wage earners during spare time they benefit by such a rise. The land holders who let their lands will gain, if they can get higher rents. We shall examine here the rise in prices of some of the important commodities produced by the cultivators in Gujarat.

Prices per 10 Maunds.

Commodities.	1905.	1910.	1915.	1916.	1917.	1918.	1919.	1920.
Rice Rs.	48·3	43·2	59·84	67·13	68·96	77·29	92·71	95·31
Juwar „	26·4	28·73	35·55	30·31	37·87	77·65	95·83	59·11
Wheat „	36·11	45·75	52·95	52·3	51·59	69·91	86·15	73·65
Bajra „	30·87	33·47	39·21	39·52	36·78	83·231	15·31	64·68
Cotton per candy „	215	303	205	292	456	653	635	503

Commodities.	1921.	1922.	1923.	1924.	1925.	1926.
Rice Rs.	95	73·5	74·5	79	82	84
Juwar „	77·08	50	44	50·5	53	55·5
Wheat „	87·07	84	65	65·5	77	79
Bajra „	76·48	63·5	55·5	54	58·5	63
Cotton per candy „	323	483	481	658	459	360

The prices of food crops went up between 1915 and 1921 by almost 100 per cent., while the rise in prices of cotton during the war years and after was much greater, although after 1920, prices showed a slight decline. I am quoting here the price index number of some of the more important articles consumed by the rural classes:–

	1914	1915	1916	1917	1918	1919	1920	1921	1922	Rise per cent.
Cotton goods.	103	99	105	123	199	290	294	267	242	138%
Kerosene oil.	140	140	162	189	244	300	302	302	302	115%
Fire wood.	167	197	157	246	228	286	285	334	236	41·3%
Sugar.	50	90	114	121	105	156	253	165	111	132%

Prices of 1873 were taken as 100.

Prices and Wages in India 1923.

Department of Statistics, 37th issue.

Statistical Abstract for British India

(1916–17 to 1925–26) p. 600.

Prices of Agricultural Stock.	1900.	1929.	Percentage increase.
Bullocks.	150-0-0	300-0-0	100%
Ploughs.	6-0-0	15-0-0	150%
Carts.	50-0-0	150-0-0	200%
Manure (Cart-load)	0-8-0	1-4-0	125%

Agricultural Produce.	Wheat.	Juwar.	Bajra.	Cotton.
1873	100	100	100	100
1914	165	194	218	114
1915	187	189	208	80
1916	174	164	188	115
1917	181	164	147	181
1918	258	...	403	256
1919	313	440	460	249
1920	262	337	323	190
1921	296	419	423	128
1922	262	268	325	186
1923	224	195	280	...
1924	221	226	260	...
1925	266	237	290	...
1926	259	274	315	...
1927	221	253	280	...

On the whole it can be said that the position of the cultivators has improved since the beginning of this century despite the rise in the cost of living. The price of articles which the cultivator has to sell has gone up more than those which he has to buy. The expenses of cultivation have gone up, but they have not advanced as much as the prices of agricultural produce. According to Mr. Mollison,[1] the cost of cultivation per acre for cotton, Juwar, Bajra and rice was as follows in 1901:-

1. Mollison's Textbook of Indian Agriculture, Vol. III. Prices and wages in India 1923. p. 157

Bajra	...	...	19- 1-0
Juwar	...	...	12- 2-0
Cotton	...	...	15-13-0
Rice	...	...	38-12-0

The expenses to-day with the same type of cultivation would be

Bajri	...	...	28- 0-0
Juwar	...	...	24-12-0
Cotton	...	...	25- 8-0
Rice	...	...	52- 8-0

The value of the yield in 1901 and to-day, if we reckon the yield was the same in both the years.

	1901	1927
Bajri with subordinate mixture	28	49
Juwar	21	42
Cotton	30	70
Rice	56	87

CHAPTER VIII.

"Land Revenue Problems."

The Land Revenue Manual[1] and the volumes of Baden Powell have described in detail the land revenue policy and systems of land tenure in Gujarat. It is not my intention to repeat here what has been said much better elsewhere. There are, however, certain problems connected with the land revenue policy of the Government which require a careful examination.

Gujarat, as we have already seen, is essentially a country of peasant proprietors. Out of 6,523,771 acres of land, 4,849,506 acres were held on ryotwari tenure in Gujarat while 1,674,265 acres were held on Talukdari tenure. The Talukdari tenures are largely confined to Ahmedabad district.

The ryotwari tenure was introduced by the British after they definitely became masters of Gujarat. The present system is a modification of the one first introduced by Goldsmid and Wingate in the Deccan. Under the existing system the settlement is made directly with the occupants. The settlements are revised generally every thirty years. The occupants are looked upon as proprietors, with a right to sell, mortgage, and alienate their holdings.

Under the Bombay system when the settlement of revenue is to be made, a taluka or a sub-division of the district is generally chosen as the unit. All the soils in the presidency are first classified. The land classification is based on the

1 Bombay Govt. Land Rev. Manual. Gordon. 2 vols.

2 Baden Powell. Land Rev. system and land tenure in Br. India. 3 vols.

depth and texture of the soil and other minor features which can be easily and definitely ascertained. The taluka is then devided into groups of villages for which a uniform standard of assessment can be fixed. This grouping will depend upon climate, position with respect to markets, agricultural skill and the actual condition of the cultivators. The first of these may be considered permanent, the second and the third less so, and the fourth, in a great measure, temporary. As these settlements are intended to be of considerable duration, there is an obvious advantage in regulating the assessments by considerations of permanent character or at least such as are not likely to undergo any very material change during the term of years for which it is to endure.[1] "In determining then upon the extent of country to be assessed at uniform rates, we (The authors of the Joint Report) are of opinion that the more permanent distinction of climate, markets and husbandry, should receive our chief attention. We should not think of imposing different rates of assessment on a tract of country similarly situated in respect to these three points in consequence of the actual conditions of cultivators varying in different parts of it." A taluka is, therefore, to be divided into groups of villages with permanent distinctions depending upon (a) climate (b) proximity to markets (c) husbandry. The assessment is fixed for the whole taluka and is distributed amongst the villages and the different lands in the villages. The assessment was largely empirical when the original settlement was made and its pitch did not depend upon considerations of gross outturn of crops, as was the case in theory at any rate under previous governments, nor on a consideration of net profits which underlay Pringle's settlements, nor on a basis of any fixed proportion between the government assessment and the rents that are obtained by private land holders, such as is adopted in other parts of India. No doubt weight was given to these and similar considerations in fixing the pitch of original assessments and weight is given to them when revision settlements are introduced.[1] The only funda-

1 Land Revenue Manual, Bombay Government.

1 Survey Settlement Manual Bombay Presidency Vol. I. page 79.

mental principle of the system of pitching assessment, under the original settlement was the somewhat indefinite one that no more should be asked from the cultivator than he could easily afford to pay.[2] This was the most difficult task in the work of settlement. It required the exercise of great judgment and discrimination. I will quote again from the joint report to show how this was done.

" The first requisite is to obtain a clear understanding of the nature and effects of our past management of the district, which will be best arrived at by the examination and comparison of the revenue settlements of as many previous years for which trustworthy data may be procurable and from local enquiries of the people, during the progress of the Survey. The information collected on the subject of past revenue settlements, should best be arranged as to enable one to trace with facility the mutual influence upon each other of the assessment, the collections and cultivation. This can best be done by diagrams, giving the information required in tabular forms. The information thus collected and exhibited with that obtained by local enquiries into the past history of the district will generally enable one to trace the causes which have affected its past conditions and a knowledge of these aided by a comparison of the capabilities of the district with those of others in its neighbourhood, will lead to a satisfactory conclusion regarding the amount of assessment to be imposed."

The distribution of this aggregate over the various classes of land and groups is to be performed by fixing maximum rates which, when applied through the medium of the classification of survey numbers to the classes of land within each group, would produce the sum desired. The maximum rate is the rent charge applicable to what is technically termed 16 annas soil. It is applied to a homogenous area consisting of a village or a group of villages. The assessment per acre of the lower class fields is decided at once by the proportion which their valuation in annas bears to 16 annas. In Gujarat there are lands which have certain advantages even over the

2 Keatinge "Rural Economy of Bombay Deccan."

16 annas classed lands, and the classification goes up to 32 annas. The Bombay method of assessment has been described by Mr. Pedder as follows:

"The Bombay method is avowedly an empirical one. When a tract comes under settlement, its revenue history for the preceding thirty or more years is carefully ascertained and tabulated in figures, statements or diagrams. These show in juxtaposition, for each year of the series, the amount and incidence of the assessment, the remissions or arrears, the case or difficulty with which the revenue was realised, the rainfall and the nature of the seasons, the harvest prices, the extension or decrease of cultivation and how these particulars are influenced by each other. The effect of any public improvements, such as roads and railways or canals and markets on the tracts or on parts of it, is estimated, the prices for which land is sold or rents for which it is let, are ascertained. Upon a consideration of all these data, the total settlement is determined. The amount is then apportioned pretty much in the same way on the different villages and the total assessment of each village is then distributed over its assessable fields in accordance with the classification which has determined their relative values on point of soil, water supply and situation."[1]

For purposes of assessment, the rates differ for Jirayat or dry crop lands, Bagayat or garden lands, and Kiaris or rice lands. In case of Bagayat or garden lands, the nature and source of irrigation plays a very important part. It is impossible to discuss here all the technicalities of the method of assessment there. At one time there was a separate rate known as Bagayat kasar for lands irrigated by wells. This tax, however, practically speaking, became a tax on capital meant for the improvement of land. It was subsequently abandoned and now there is a subsoil rate throughout Gujarat. This subsoil rate depends upon the depth at which water is available whether the water is actually utilised or not. The subsoil water rate is resented by the cultivators on

1 Baden Powell. Land Revenue Systems of Br. India, P. 210.

the ground that they have to pay the rate even when no water is available for use on land.

After having examined the principles underlying the land revenue assessments, we will now see when the rates are enhanced or how the rates are determined at the time of revised settlements.

Accordingly to the Bombay Land Revenue policy as embodied in an executive order in 1884, no enhancements are to be made if the productivity of land has been increased owing to permanent improvements introduced by the cultivator himself. The Government has a right to enhance the rates if the cultivator is benefited by the rise of prices, the construction of better roads or the opening out of new markets by the construction of railways. The sole ground on which enhancement can be made depends upon the profits of agriculture.[1] If the profits are increased, the State has a right to increase the rate of assessment. There is, however, a limit to the enhancements in revision settlements embodied in the following rules.

1st. The increase of revenue in the case of Taluka or a group of villages brought under the same maximum dry-rate, shall not exceed 33 per cent.

2nd. No increase exceeding 66 per cent. shall be imposed on a single village without the circumstances of the case being specially reported for the orders of Government.

3rd. No increase exceeding 100 per cent. shall in like manner be imposed on an individual holding.

It is difficult to find whether profits have increased or not and to a large extent the settlement officers depend upon the letting values of land and the selling values of land. The recent tendency is to attach greater importance to the rent or letting values.

1 Sec. 107 of the Land Revenue Code.

There is a large class of people who think that the value of land or the rate at which it is let is not a proper criterion for ascertaining the profits of agriculture and for raising the rates of assessment. The selling value of land is vitiated by the fact that in a country like India where the posssession of land stands for prestige and where agriculture is by far the most important source of occupation, people by competition push its value beyond what it should be due from its actual yield. In many parts of Surat district, for example, people coming from Africa after collecting some money, would like to settle down in their own villages. In their desire to get the lands in their villages, they will push the value of the land. The prestige which the possession of land gives combined with absence of any other suitable occupation, results in inflation of land values.

In case of letting values also the statistics are, sometimes, misleading. The original holder of a land, when reduced to the position of a tenant, would be prepared to pay a heavy rent for the occupation of land which he once owned, rather than be deprived of it. The rate at which the land is sublet may also include other elements besides pure rent for the use of land. The owner might have improved the land or manured it. The cases of land sale or letting on cash money basis sometimes are so few that any conclusions arrived at on these data may sometimes be misleading. Again, in certain cases, when the cultivator owns a very small holding which he supplements by renting a few more acres, the owner of the land, which the cultivator gets on lease obtains more than the full economic rent. " In such cases the owner of the land leased to the cultivator cannot only obtain the full economic value of his land but a large part of the economic value of the land belonging to the peasant himself for this is of little use by itself, being insufficient to maintain the whole family. It is only when more is added to it, that it attains its full value and the difference between its value alone and with other land added to it can be claimed by the owner of the land so added."[1] Again, in a purely agricultural country like

1) Rowntree—Lessons from land and labour in Belgium. p. 124.

India, where there are very few other occupations to fall back upon, rents are unduly high and are not true indications of the economic value of the land. In a village or a district where the pressure of population is greater, the rents are much higher than in the neighbouring districts. In the two villages of Borsad Taluka which I visited the rent for an acre of land varied from 30 to 40 Rupees. This was largely due to the great pressure of population on the soil. The density of the Taluka is about 600 per square mile. It must, however, be admitted that apart from such indications, unless minute enquiry is made about each field and the net profits on each field, it is impossible to find out whether there has been any increase in profits or not. If genuine economic rents can be ascertained they will supply a good index of the profits of cultivation. The settlement officer in collecting the rent statistics has only to take into account genuine rents. The following quotation from Mr. Rieu, the Revenue Member of the Bombay Government, wilt give an idea of the care which settlement officers are supposed to take in collecting rent statistics." Carelessness in collecting reliable data may lead to injustice, but it is the duty of the settlement officer to be very particular in the collection of his facts and figures.* With regard to the question of the collection of data regarding rents, I should like to refer to the settlement report of the Patan Taluka in Satara District. I refer to para 70 of that report in which the settlement officer makes a statement of how he proceeds to consider all the recorded rents that were available in the villages in which he made the enquiry.

Leases of inam land, as these sometimes fetch a higher rent for reasons of sentiment and sometimes a lower rent because the holder has only to make good from his rent, the amount of Judi and not of assessment, are not taken into consideration. Similarly leases, where the tenant also is a debtor, are generally ignored. The rent, in such cases, is usually determined by the interest due on a loan rather than by the

* Legislative Council debates, Bombay, 1927 March 17th. The quotation was taken from the Settlement Officer's report of Pattan Taluka in Satara District.

value of the land or the interest added to the true rent, the total being entered in the agreement as the rent.

Leases between near relations or leases where rent is fixed in kind are also not to be taken into consideration, because in the case of former the rent is nominal, while in the case of latter, it is difficult to exactly determine the money rent.

The residue, after the rejection of all uneconomic leases, contains all the obtainable information on the rental value of the land in villages examined. The statistics derived therefrom show how much the cultivator is willing to pay to the landlord for the right of cultivating the latter's land. The cultivator besides paying his rent, has to recoup himself for expenses of cultivation, including his own maintenance and that of his family and the interest payable on such capital as he may have borrowed to provide seed or implements.

He has also to put by something for future expenses. It is clear that the expenses of cultivation have to be met from the profits of cultivation and they have to be met before the rent is paid. The rent can only be paid out of the surplus. No cultivator will then agree to pay more rent than can be paid each year or after a series of years from the surplus profit, after the expenses of cultivation detailed above have been made good. Miscalculations may be made, but taken over a series of years, the average rent will be such as will satisfy these conditions, otherwise, the land will go out of cultivation. The level of rent depends upon the price of produce, which is determined by the ratio of supply to demand; supply being largely determined by the cultivable area and the demand by the population and the standard of living. The rent of each particular field is decided by the margin of profits which it leaves to the cultivator after he has made good the expenses of cultivation. In other words, the rent of one field will be higher or lower than that of another according to the quality of the soil, the nearness of the field to the market, the amount of rain it gets and its other advantages. How much rent it is worthwhile to pay for each

particular field is a question the cultivator has to decide for himself. If he gives too much, his net profits will be diminished, if he does not give enough, some one else will rent the land. The mass of leases now collected represent the experienced valuation made by the cultivators themselves of the rental value of the land. The figures are, therefore, of the utmost value and as assessment is merely a proportion of rent, they are also the basis of the settlement. Government do not decide the amount of rent. They merely decide what proportion of it is to be levied as assessment. The rent is fixed by bargaining between landlord and tenant." This lengthy quotation will show how the settlement officer is to exclude all non-economic rents, but it ignores the fact that there never can be such unfettered competition in India. It also ignores the fact that in absence of any other source of occupation, there is a great pressure upon land raising the rents to a unduly high pitch. Rents are no doubt reliable guides but they cannot be made the sole basis of assessment. It would be much fairer if rents were made one of the important factors in determining the rate of assessment rather than the sole basis of fixing the assessment in future. It assumes that the average Indian cultivator possesses the faculty of nicely calculating his expenditure and profits and if he finds that it is not worthwhile to cultivate with a given rent he can give up the land and go in for some other kind of occupation. In this connection what Professor Marshall says is worth taking into consideration.[1] "The chief of these difficulties arise from the fact that while this system is purely competitive in its essence, the conditions of agriculture even in England offer a strong resistence to the full action of competition. To begin with there are special difficulties in ascertaining the facts on which that action must be based. We have noticed the difficulties of keeping farming accounts. To this must be added that a farmer's calculations as to the rent which it is worth his while to undertake to pay are further hampered by the difficulty of deciding what is a normal harvest and a normal level of prices. For good and bad

1) Marshall's Principles of Economics, pp. 742-743 fourth edition.

seasons come so much in cycles that many years are required to afford a trustworthy average of them."

The land revenue policy of the government has been subject to a good deal of criticism from the members of the legislative council.

It has been urged by the members of the Council that the land revenue policy should be embodied in a regular statute with the approval of the Council. The Joint Parliamentary Committee had observed in 1919 that "The Committee are impressed by the objections raised by many witnesses to the manner in which certain classes of taxation can be laid upon the people of India by executive action without in some cases any statutary limitation of the rates and in other cases any adequate prescription by statute of the methods of assessment. They consider that the imposition of new burdens should be gradually brought more within the purview of the legislature and in particular without expressing any judgment on the question whether land revenue is a tax or a rent, they advise that the process of revising the land revenue assessments ought to be brought under closer regulation by Statute as soon as possible. At present the statutary basis for charging revenue on land varies in different provinces, but in some at least, the pitch of assessment is entirely at the discretion of the Government. No branch of administration is regulated with greater care or elaboration but the people who are most affected have no voice in the shaping of the system and the rules are often obscure and imperfectly under stood by those who pay the revenue." In accordance with the wishes of the legislative Council, a committee was appointed in June 1924, to consider the question of bringing the process of revision of land revenue assessment under closer regulation by Statute. This committee was not able to submit an unanimous report. Of the twenty two members, only seven signed it without qualification. The seven official members have appended a join minute of dissent and the Commissioner of Settlement Mr. Anderson has submitted a separate one. Six non-official members have appended joint or separate minutes of dissent.

The non-official members of the committee recommended that in revising the assessments of land revenue, regard shall be paid to the profits of cultivation. The settlement officer shall take into account the following factors ;

1. The state of communications during the previous settlement.
2. The proximity of markets.
3. The trend of prices.
4. The general economic conditions and history of the tract.
5. The results of crop experiments.
6. Rental value.

In order to ascertain the rental value the real rents paid in competition by tenants to landlords during fiive years immediately preceding the revision settlement,excluding years of abnormal prices, should be taken into consideration. "The committee, however, by a majority recommend that the assessment should not exceed 25 per cent. of the profits of cultivation, i.e., the gross profits less all the expenses incurred in deriving those profits." (Para 39, page 21.)

The revenue commissioners on the other hand proposed that the revision of assessment of land revenue shall be based upon the rental value, but regard shall also be had to the general economic conditions and history of the tract. The assessment shall not exceed half the rental value.

The official members of the committee were also in favour of looking upon rents as the basis of assessment. "The only way to obtain a clear definition of the principles of assessment is to affirm that rental value must be adopted as the basis of settlement. " In cases where rental statistics are not available, it will be necessary to look elsewhere for the basis of assessment.

The non-official members also recommended the appointment of standing advisory committee in matters

of revision of land assessments and a local body in each taluka to assist the settlement officer in his work of revising the settlement. The official members were opposed to both these recommendations. By resolution No. 1790/24 of 13th May 1927, the Bombay Government accepted the principle of rental basis for fixing assessments. The resolution also laid down that the limits of enhancement should be reduced from the present limits of 33 p. c. for a taluka or 66 p. c. for a village and 100 p. c. for a holding, to a general limit of 25 p. c. in case of all taluka that have already undergone a second revision.

The taxation inquiry committee on the other hand recommended 25 p. c. of the annual value, i. e., the gross produce less cost of production. The functions of the settlement officer should be limited to the ascertainment of the value on a uniform basis. A uniform rate fixed for the whole province, should then be applied to these valuations on district falling in for re-settlement. At present there is no uniformity in the principles underlying the determination of the rates of assessment. In some districts, the ratio of assessment to net output or to rents is one third, in others it is one fifth or one sixth. A uniform rate throughout the presidency, whether it is based on annual value or rents, would certainly be much better. At present certain places and particularly the Gujarat districts are more heavily assessed than other parts of the presidency.

Before closing this chapter there are two more aspects of the land revenue policy which require a careful examination. It has been urged that the rates of assessments have been progressively increased at each revision in Gujarat and that the rates are much higher than what the cultivators can afford to pay.

This charge was very seriously made by Mr. R. C. Dutt about all temporary settled areas in the past. Even to-day some of the members of the legislative council maintain that the assessments in certain parts of the Bombay presidency are very heavy. Every time that there is a revised settlement,

the cultivators look upon enhancement of revenue as unjustifiable and not warranted by the profits of agriculture. The Government on the other hand, relies upon price statistics, the selling values of land, the ratio between assessment rates and rent and chiefly upon letting values for enhancement of their demands. There are some who maintain that the cultivators derive no profits from agriculture and that they live on the margin of subsistence. The rates of assessment are too heavy for them and are partly the cause of their indebtedness and are responsible for the fact that the cultivators have no reserve to fall back upon during the years of famine. These allegations require a careful examination. I am quoting figures for two villages of Borsad taluka which I examined. In the village of Bodal in Borsad taluka one Khusalbhai had 50 bighas of land for which he paid an assessment of Rs. 187-8-0, or Rs. 3-12-0 per bigha. He let 20 bighas for Rs. 400. The rent was about 6 times the assessment. Survey No. 202/4 in the same village consisting of a small plot of land of 13 gunthas for which the rate of assessment was Rs. 1-8-0 fetched for the owner the rent of Rs. 8. A few more examples were picked up by me at random which showed the following results :--

Survey number.	Area A.	Area G.	Assessment. Rs.	Rent.
719	1	2	5	28
635	1	19	8-8	90
566	1	38	8	69

In the villages of Bardoli taluka rents were in many cases four times as high as the rate of assessment.

The famine commission in 1901 made an inquiry into this question and the Bombay Government submitted certain figures to it showing the relations between the assessment per acre and the letting value per acre.[1]

(1) Land Revenue policy of the Government of India Ld. (1089). 1902 p. 51

	Rate of assessment.	Letting value.	Ratio.
Kaira Nadiad	4- 7-10	13- 8- 0	3·9
Anand	3- 4- 4	11- 5-11	2·69
Borsad	4-11-10	22- 4- 6	4·69
Kapad Vanj	1-12- 1	6-11-11	3·83
Thasra	2- 9- 0	5-11- 8	2·23
Surat Ghorasi	4- 6- 0	11-13- 8	2·70
Olpad	5- 8- 3	10-12- 9	1·95
Bardoli	3- 5- 3	7- 7- 0	2·23
Chikli	2-12- 4	4-12- 4	1·74
Jalalpur	3-13- 9	8-13-10	2·29
Bulsar	2- 8- 7	5-12-44	2·27

The average price of the outturn of staple crop from an acre of land in 1901 was

	Value of outturn. Rs.	Incidence of assessment.	p. c.
Ahmedabad.	19·06	2- 8-8	13·34
Kaira.	28·10	4-13-5	17·22
Panchmahal.	20·24	1- 1-9	5·48
Broach.	24·62	5- 2-3	20·88
Surat.	43·10	5- 9-0	12·91

The assessment even in 1901 approximately came to a little more than one-third of the letting value, while it was considerably less than 1/5 of the gross produce though

Gujarat was perhaps the most heavily assessed part of the Bombay Presidency. Things have considerably changed since 1901 but on the whole the assessment no where tends to exceed ½ of the rental value. We would now examine the ratio of assessment to gross produce to-day though the proportion of assessment to the gross produce is not of so great a significance as that between net profit or letting value.

I quote the average rate of assessment per acre in the five British districts of Gujarat.

	Rs.
Ahmedabad	2- 0- 0
Kaira	3- 5- 8
Panchmahal	0-13-10
Broach	3-13- 9
Surat	3- 5- 9

The average price of the outturn of staple crop of cotton or juwar according to the prices which obtained between 1920 and 1926 would not be less than Rs. 50 in case of cotton, and Rs. 30 in case of Juwar. According to the settlement report of Mehamadabad in 1918, the value of the outturn per acre in case of rice was estimated from Rs. 35 to 80, in case of cotton to Rs. 30, for wheat Rs. 30 to 45 and juwar or bajri to Rs. 20. If we accept the lowest figures of Rs. 30 for cotton and Rs. 20 for bajri and juwar, even then the percentage which the rate of assessment bears to the gross produce comes to

Ahmedabad	10 p. c.
Kaira	18·1 p. c.
Panchmahal	5 p. c.
Broach	12·5 p. c.
Surat	9·2 p. c.

In case of Broach and Surat, I have calculated the value of cotton, which is the more important crop there, while for the three other districts, I have taken into account the value of Juwar and Bajri only. To be more precise, I am quoting a

few instances which I have collected in Surat district. I have figures for an acre of good rice land and for a good Jirayat or dry crops land in the same district. The rice land yielded 1400 lbs. of rice and 200 lbs. Val and 40 lbs. of castor. The money value of this produce, at the price level which obtained in 1926, was Rs. 87. The assessment was Rs. 6 and 2 annas. It amounted to a little over 7 p. c. of the gross produce. In case of the dry land, the cultivator grew cotton in one year and Juwar in the second year. In the third year he is supposed to leave his land fallow but he does not invariably do so. The produce of cotton and juwar, with its subordinate crops like Tuver on the average comes to 320 lbs of raw cotton or in money value Rs. 64, at the price level which obtained from 1918 to 1926 and Juwar about 600 lbs and Tuver about 80 lbs., the money value of which was Rs. 40. The average for the two years would be Rs. 52 but if we take into consideration the third year when the cultivator is supposed to leave the land fallow, the average would be Rs. 35. The rate of assessment was Rs. 2–9–0 or about 5 p. c. on the average value of the crop for the two years and 8 p. c. for the entire period of rotation of three years.

The gross produce, however, is not of as much significance as the net produce but it is difficult to find out the net produce. The expenses of cultivation vary from field to field and for different cultivators; but in the two examples, I have quoted above I was told that the expenses of cultivation on the rice land were Rs. 52 per acre while those on the dry land were Rs. 25. The net produce of the cultivator in the case of rice land was, therefore, Rs. 25 and of the dry land was Rs. 38 for the whole rotational period of three years. The percentage of assessment to the net produce, in the first case comes to 22.8 p. c., while in the second, it came to little less than 20 p. c.

If we look at the average rate of assessment for the various districts, there has been no substantial rise in it, taking

1) District Gazetteers of Ahmedabad, Kaira, Panchmahal, Broach and Surat.

into consideration the fall in the purchasing power of money. The following figures will prove my point;

	Original.	Revised.	1925-26.[2]
Ahmedabad.	1- 5-0	1-13- 5	2- 0- 0
Surat.	2-11-7	2-11- 6	3- 5- 9
Broach.	4- 4-0	4- 0- 5	3-13- 9
Kaira.	2-12-0	3- 7- 6	3- 5- 8
Panch Mahal	0-14-9	0-15-10[1]	0-15-10

In terms of real produce, the rate of assessment has gone down. Between 1818 -36 the land revenue of Broach district was 16,76,754 Rs. and the average rate per acre was Rs. 5-2-6. In terms of real produce, it amounted to 242 lbs. of millet and 98 lbs. of raw cotton. Between 1837-44 the land revenue was Rs. 16,70,971 or Rs. 4-12-8 per acre. In terms of real produce it amounted to 350 lbs. of millet or 134 lbs. of raw cotton per acre. Between 1845 and 70, the average rate was Rs. 4-0-6 per acre and in terms of real produce, it came to 210 lbs. of millet and 80 lbs. of raw cotton. Between 1870 and 76, it was Rs. 4-4-0 or about 160 lbs. of millet and 45 lbs. of raw cotton. The average rate of assessment at prices which obtained between 1918-1926 would be 70 lbs. of millet and 25 lbs. of raw cotton. 1

Before we close this chapter on land revenue, a word must be said about the argument very often brought forward that only incomes above a certain minimum should be taxed. It is urged that income from land which falls below a fixed minimum must be exempted while there should be a progressive rate of tax for incomes above the minimum. In short, the present distinction between incomes from land and incomes from other sources should be abolished. A certain

2) Land Revenue Administration Report 1925-26.

1) Gazetteer of Bombay Presidency edited by J. Campbell, Vol. IV.

minimum should be exempt from tax and there ought to be a progressive rate of tax for incomes above that minimum. In theory, it is inequitable to tax subsistence incomes but exemption from taxes of land yielding an income below a fixed minimum, unless that minimum is kept at a very low figure, would mean a great reduction in government revenue. There is no other substitute to make up for this loss in revenue. As it is, there is a cry from all quarters, that there is not enough money for developing nation building departments. If India wants the benefits of a good and an efficient government where all departments are properly looked after, it must be prepared to face an increasing rate of taxation. At present, the civil services and the army do absorb a great portion of India's revenue but even if retrenchment might be made in these heads, more money must still be raised if sanitation, education, irrigation and roads are to be developed. We spend very little money on social services. A modern government run on the best lines is an expensive affair. We cannot have both things, the amenities of a well conducted efficient government looking after all the needs of the community and at the same time a low level of taxation.

Another objection raised against the exemption from taxes of land yielding a net return below a certain minimum, is that it would result in greater subdivision of land 1) to avoid the payment of taxes. As it is, subdivision of land is one of the causes of agricultural backwardness of India. Efforts must be made to discourage this process rather than stimulate it.

There is, however, another problem of land revenue which deserves immediate consideration. In Gujarat as we have seen before, there is an increasing tendency on the part of Khatedars to let their lands and live on rents like absentee landlords. From a social point of view this class of persons is undesirable. In Italy for purposes of land taxation distinction is drawn between income derived from the exploitation of the land and income derived by the proprietor as rent.

1) Taxation Inquiry Committee Report page 78.

The tax is much heavier in case of income going to the proprietor as rent, than in the case, if the land was exploited by him. It is a common belief in India, that there is no other country except India where land is the source of taxation. The following figures will give one an idea of the importance of land tax in Italy.

Land tax is the most important source of central revenue. There is first of all a tax on the proprietors which is a tax on land and is 10 p. c. of its annual value. For the purposes of taxation a cadastre of all land according to their annual value is kept and is revised periodically. Over and above the tax on rent, there is a tax on income derived from the exploitation of the farms. It is only 5 p. c. in case the land is directly exploited by the owners or by the metayers, but it is 14 p. c. in case it is cultivated by the tenants. Provincial and Communal bodies have the right of a surtax, the maximum limit of which is 50 p. c. of the income from the land.

There are local rates on income from land which are graduated. In case the income is 200,000 Lire, the tax per year is 10,000 Lire or 5 p. c. in case of incomes of 1500 Lire, the tax is 24 Lire or 1. 6. p. c. only, for incomes of 25,000 Lire the tax is 1200 Lire or 4.8 p.c.

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CHAPTER IX.

Co-operation and Agriculture.

Gujarat, as we saw, is essentially a country of small peasant proprietors. For small proprietors, farming can rarely be a paying concern unless it is aided by co-operation. A small peasant has limited or no capital at his command. He cannot offer good security for credit. It is impossible for him individually to make use of expensive implements. He is at a tremendous disadvantage in buying and selling. When buying, he only requires small quantities of materials. He is confined to the local markets. Freight charges are higher for his small purchases. It is difficult for him to insure against inferior quality or fraud. His difficulties are increased in selling; as he cannot grade his produce or turn out a large bulk of uniform quality, he falls into the hands of dealers and middlemen. He has to pay excessive freight charges on small lots. He finds particular difficulties in disposing of the inevitable surplus of inferior quality.[1]

The success of Danish agriculture and the great advance which German agriculture made during the last sixty years were largely due to the excellent co-operative organizations in these countries. Denmark is a paradise for small farmers, with its network of co-operative creameries and bacon factories and egg collecting stations and electric installations throughout the country which make electric power available to the farmers at surprisingly cheap rates. It has made farming a very paying industry aud made its farmers the most prosperous throughout Europe.

The following figures will give the reader the idea of the importance of co-operation in Danish agricultural life.

1 Hall's Agriculture after War.
2 Middleton's Agriculture in Germany.

Approximately 185,000 cultivators, out of a total of 206,000 are members of co-operative organizations. 86 p. c. of the dairy cows of the country are owned by members of co-operative dairies. The total number of co-operative dairies exceeds 1400, and out of these 546 are members of 11 butter export societies. The co-operative slaughter houses control over 80 p. c. of the entire export of bacon and by-products of pig breeding. Over 70 p. c. of the farmers and 75 p. c. of the pigs of the country are included in the 50 co-operative slaughter houses. The Danish egg export society was founded in 1895. There are now about 650 local egg "sale groups" and fifteen packing centres under the control of the central society. This represents 45,000 members and 26 p. c. of the poultry stock.

Manure, feeding stuff, machinery and seeds may be all purchased co-operatively and on an average one third of the Danish farmers obtain their supplies through co-operative societies. The progress which Irish agriculture has made is largely to be attributed to the advance of co-operative movement, due to efforts of enthusiastic leaders like Sir Horace Plunkett. Denmark is largely a land of small holdings and therefore the farmers realise that agriculture, if it is to be rendered paying, must be organized on a co-operative basis. A comparison between Danish or German agricultural conditions with those in England would convince any one of what co-operation well organized can achieve.

I am quoting a few figures to show the progress which Denmark made within a comparatively short period of fifty years in the production of wheat, Barley and Oats per acre.

Denmark.

Output in Bushels.

Year.	Wheat.	Barley.	Oats.
1889-92	34.6	29.9	32.2
1908-12	42.0	36.5	41.3

England.

Years	Wheat	Barley	Oats.
1885-94	29.4	33.1	40.6
1902-11	31.8	33.4	42.3

The average annual yield of butter per cow was estimated in 1864 as about 80 lbs, by 1887 it had risen to 116 lbs by 1908 to 220 lbs. and by 1914 to 229 lbs.*

Denmark provides to all the agricultural countries a lesson which should be carefully borne in mind.

The evidence from all quarters in India convincingly proves that agricultural industry is in a backward condition. There may be a few provinces like Punjab, which may be exception, but even Punjab, when compared to agriculturally advanced and progressive countries is very backward.

Among the things which India wants to-day is the provision of cheap capital for the cultivators, and the redemption of the chronic debt of the Indian ryots which makes agricultural progress impossible. This heavy debt, which approximately amounts according to calculations of some men to 600 crores[1] of rupees, is a mill stone tied round the neck of India's agricultural industry. The sway of the money lender must be abolished. The farmers must be able to command good seeds and agricultural requisites at reasonably cheap prices and they must be in a position to market their produce advantageously. Well-organised co-operation alone can achieve this. I am attempting in this chapter to describe the progress which co-operation has made in Gujarat and its possibilities. We shall examine the work of co-operation in the following main directions:—

(a) The provision of capital.
(b) The purchase of agricultural requisites.

*(a) Hall agriculture after War.

1 Darling. The Punjab peasant in prosperity and debt.

(c) The preparation and sale of agricultural produce.
(d) Farm insurance.

The history of the co-operative movement in Gujarat commenced with the passing of the co-operative credit Act in 1904. Prior to the passing of the Act the minds of Indian administrators were deeply engaged in finding a solution of the problem of rural indebtedness and of provision of cheap credit to the cultivators. The alienation of the land by the agriculturists to the non-agriculturists on a large scale in Bombay Presidency, and the subsequent disturbance that broke out in the Deccan, and which led to the passing of the Deccan agriculturists' relief Act in 1876 had focussed the attention of those entrusted with the administration on the question of agricultural indebtedness.

Under the leadership of public spirited men like Sir William Wedderburn, at one time it was proposed that an agricultural bank might be established in Bombay Presidency to cope with this problem.[1]

The attention of the Madras and U. P. Government was also at the same time directed to this question and they sent Mr. Frederick Nicholson and Dupernex to study the systems of co-operative credit which then obtained in Europe. Nicholson published a lengthy report, which is a mine of information, and the gist of his report was the recommendation that rural co-operative credit banks on the Raiffeisen model should be introduced.

Lord Curzon, who was then Viceroy of India, appointed a committee under Sir Edward Law to draft a bill for the establishment of Co-operative Credit Societies in India. An Act, called the co-operative Credit Societies Act was passed in 1904.

There was ample scope for the successful working of the co-operative movement in India. The existence of old village communities, the Nidhis in the South and the Akhadas in Northern India, clearly indicated the gregarious and co-opera-

1 Ewbank's Manual of co-operation in Bombay Presidency.

tive habits of the people. It was believed that the materials of a successful co-operative movement were already there. What was required was the promethean spark to give life to these latent materials.

The Act enabled the registration of Co-operative Credit Societies in India to be carried out. There were to be registrars of Co-operative Credit Societies in all the Indian provinces, who were to attend to the registering of the Co-operative Societies, and to ascertain before doing so, that they complied with the main principles of co-operation. The Act divided the societies into urban and rural societies. The rural societies were to be of unlimited liability while the liability in urban societies may be limited. The rural societies were to follow the principles of Raiffeisen. These comprise :—

1. The association of peasants in small local communities for the purpose of pooling their credit.
2. In order to increase their borrowing power, the members of these associations, termed rural credit societies should be liable to the extent of all their property for the debts of the Society. The rural credit societies obtain their capital by borrowing from ordinary banks and they re-lend the money to their members.
3. Admission to these rural societies depends more on character than financial competence. New members should undergo election. The societies should be confined to a small area like a village or two villages. All the members should be neighbours and know one another.
4. The habit of thrift and self-help should be encouraged. As far as possible, the members were to be encouraged to place their deposits with the local societies. There was no share capital or at the most the shares should be of small nominal amount. The capital of the societies should therefore largely consist of the members' deposits and

loans and advances made by outsiders. The profits made by such rural credit societies, owing to the difference between the rate at which they borrow money and the rate at which they lend money to the members were to constitute a reserve fund and were not to be divided amongst the members. When the accumulation of reserve fund reached a certain percentage, in certain cases, the profits were to be used for business purposes by the creation of "Endowment funds" which might be used in aid of charity or to support schemes of education or any scheme of social welfare.

5. The work of the societies should be done by the members without any payment. The cost of management must be as low as possible. The work of the societies was to be done by an executive body known as the committee of management, consisting of about five members. There might be a paid treasurer who is the important official of the society. The executive committee was however controlled by a supervising council, a bigger body than the executive committee, meeting about once a month. The final control was to be in the hands of the general body of the members. The accounts of the societies were to be periodically carefully examined and audited.

6. Loans were to be given for productive purposes only.

In Germany with the increase in the number of these societies they joined in a federation. Subsequently the propaganda work, the laying down of the policy and supervision was largely done by the union or federation. The union supervised the accounts of the various societies. For financial purposes, later on district banks were started and the finances began to be centralised. Eventually a central co-operative bank was established by Raiffeisan at Neuweid in 1876 and which afterwards was transferred to Berlin. A

state central co-operative bank for the whole of the kingdom was established a little later.

The Indian rural societies largely conform to these principles of Raiffeisen's societies. The movement started in 1904, became very popular and rapidly spread. The following figures for the whole of Bombay Presidency and Gujarat speak for themselves.

Bombay Presidency.

Year.		No. of Societies.	Number of members.	Working capital. Rs.
1914		698	66,704	65,79,994
1915	Central banks.	5	1,758	20,74,516
	Agricultural societies.	674	51,113	35,31,777
	Non agricultural ,,	137	31,739	25,06,026
		816	84,616	81,12,319
1920	Central banks.	14	5,987	65,78,961
	Agricultural societies.	2091	1,55,906	1,10,39,323
	Non agri. societies.	398	76,061	84,37,070
		2503	2,37,954	2,60,55,354
1925	Central banks.	21	10,044	2,23,14,876
	Agricultural societies.	3377	2,42,674	1,97,61,913
	Non agri. societies.	646	1,39,445	1,98,89,927
		4044	3,92,163	6,19,66,716
1926	Central banks.	21	10,075	2,98,93,246
	Agricultural societies.	3868	2,71,273	3,14,76,171
	Non agri. societies.	671	1,66,460	2,64,98,432
		4560	4,47,808	8,78,67,849
1927	Central banks.	21	12,281	3,63,68,284
	Agricultural societies.	4286	3,00,077	3,63,50,347
	Non agri. societies.	684	1,70,372	2,98,32,235
		4991	4,82,730	10,26,50,816

Gujarat (Agricultural societies.)

Year.	Number of Societies.	Number of members.	Working capital. Rs.
1915.	210	16,227	7,71,031
1920.	348	26,284	13,42,976
1925.	575	37,510	25,02,900
1927.	634	43,326	40,58,165

The urban societies which were meant for the town artisans and the small traders differ slightly from the rural societies. These societies, on the whole follow the Schulze Delitsch's model. The liability is generally limited. There is a small share capital. The area is much wider and is extended to a whole town and is meant for a wider variety of classes.

Only a certain proportion of the profits is carried on to the reserve funds, while the rest is divided amongst the members in the shape of divided. The work of the societies is carried on by paid agency. There is supervision by the council of supervision and the general assembly of the share holders. The voting is based on the democratic principle. Every share holder has one vote.

The German Co-operative movement, as contrasted with that in France, has largely been financially unaided by the State. The wole co-operative movement is based on the principle of self-help. It was held that any outside financial help, therefore, is incompatible with true co-operative spirit. The whole movement was the work of a few enthusiasts like Raiffeisen and Schulze-Delitsch, though it must be admitted that they met with a good response from the people. Co-operation can never succeed on an uncongenial soil. There must be willingness on the part of the people to co-operate- The impulse may come from outside. It may

be from born leaders or a band of enthusiastic men like Raiffeisen or Schulze Delitsch in Germany, Luzzatti in Italy or Horace Plunkett in Ireland, it may be the Government as in India; the eventual success of the movement depends entirely upon the people whom it affects.

One of the greatest drawbacks of the co-operative movement in Gujarat is that the whole movement has been more or less the result of official activities assisted to a certain extent by voluntary workers. The peasants whom the movement affects are very largely apathetic to the movement. If urged by voluntary organizers or the district officials, they are willing to form co-operative societies, but they rarely evince any active desire to combine into co-operative societies for their own benefit. They have not yet, themselves felt the need of organizing themselves on a co-operative basis. The movement is entirely lacking in spontaneity.

This is partly due to the hopless ignorance and illiteracy of the average Indian Ryot coupled with his outlook on life. The cultivators of Gujarat and the rest of India are of a fatalistic bent of mind. They like to take the line of least resistence and they accept with resignation all the events in life. Indian Religion whether Hindu or Mahomedan may have something to do with this and this trait may have been strengthened by their natural surroundings and environment. Nature itself is so uncertain in its bounties. It may flood the land with a deluge as it did in Gujarat in 1927 or it may cause such a drought that cultivation becomes alsmost impossible. Diseases like plague, cholera, and small-pox which cut short lives wholesale, help to create among the people an attitude of fear and awe towards the unseen powers, of which the workings are inexorable. All attempts to combat against their dispensations are regarded as futile.

The co-operative movement therefore has not yet done all that its inaugurators hoped. Yet it has made a very substantial progress as the figures show.

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1 Woolf's Co-operation in India.
2 Wadia and Joshi's Wealth of India.

I will attempt to give here in barest outline the working of co-operative credit societies in Gujarat. The statistics show that by far the most important aspect of co-operation in Gujarat is confined to agricultural credit societies.

The Act of 1904 has been considerably modified by the Act of 1912. The societies in India are now divided into limited liability societies and those with unlimited liability. The village societies are known as primary societies. The Act of 1912 recognizes the existence of more centralised institutions like the co-operative district banks about which we will have more to say a little later. The earlier act was confined purely to credit societies. The act of 1912 was wider in its scope and recognised all form of co-operative activities.

The primary societies for agricultural credit are confined to one village. The number of their members does not exceed 100. If any number of men not less than ten in a village, desire to form a co-operative agricultural society, they have to apply to the registrar for registration. If the members of the society conform to the principles of co-operation, the registrar never raises any objection. As a rule these societies have very little share capital. The working capital of the societies consists of members' deposits and the money which they can borrow from outside. As a rule they get an advance from the district central banks. There is the managing committee of the society and a paid secretary who carries on the detailed work of the society. There is no effective council of supervision in Gujarat societies. The general body of the members, though in theory they exercise control over the executive, in reality have very little control over it. The normal credit of the members is fixed at the general meetings and within that limit the executive can grant loans or advances. The loans are as a rule for a period of one year and the maximum limit is 5 years. The object of the societies is to provide ryots with working capital, but they do advance money for other than productive purposes, like marriage ceremonies and social calls of similar nature. The

societies insist on punctuality of repayment, though there are very often cases of outstanding dues against some of the members. The secretaries of the primary societies in Gujarat are generally paid and they are the important executive officers of the society. The accounts of the societies however are audited by Government auditors. In India owing to the illiteracy of the members, the Government retains control over the supervision of accounts through its paid auditors.

The Act of 1912 recognizes central co-operative societies also. District banks were formed throughout the presidency to finance the primary societies. In Gujarat for example there are in all 4 district banks. These district banks have individual as well as primary societies amongst their share holders. They belong to what might be called the " Mixed " type of societies. There is a certain amount of advantage in mixed societies over those consisting exclusively of primary societies or exclusively of outside individuals. In the former case the district banks would find it difficult to get the support of the outside money market and to get efficient business ability on their board of directors. On the other hand, if they consist purely of outside individuals, they tend to become purely commercial banks and try to make as much profit as possible and ignore the interests of primary societies which they try to finance. The co-operative ideal is entirely lost sight of. In case of mixed societies, with a predominant voice of the societies in the management, the interests of the primary societies would be properly attended to and the co-operative spirit maintained.

The Central banks, in theory, serve the purpose of balancing centres. One primary society may have more money than it needs while the other may have less than it needs. The central bank is supposed to collect the money from societies which have more money than they need and to put it at the disposal of those which have less than their requirements.

For financial purposes there is a great advantage in centralization though responsibility and the business of actually

granting a loan must be decentralised. The provincial co-operative bank of Bombay which was started in 1911 now serves as an apex bank. The district banks of the presidency are its shareholders though there are also outsiders who by their prestige and business abilities help it to make use of the outside money market in furtherance of the co-operative movement. The Bombay provincial bank to a certain extent gets assistance from the government, in the shape of the government guaranteeing 5. p. c. rate of interest to its debenture holders. His Highness the Gaekwad of Baroda bought a substantial portion of these debentures. Another interesting feature of the co-operative movement in Bombay presidency is the formation of supervising and guaranteeing unions. In order to ensure effective supervision in Bombay presidency, the Registrar insists that the societies should be affiliated to some supervising union. The guaranteeing union undertakes to guarantee the loans made to primary societies. The supervising unions supervise carefully the accounts of the various primary societies affiliated to it. The district banks naturally find it safer to give loans to primary societies affiliated to unions than to those which are not. Mr. Woolf the doyen of the co-operative credit movement, does not approve of these guaranteeing unions on the ground that it makes the primary societies slack and it tends to throw off the responsibility from the societies to the union. In absence of effective supervision this idea seems to be however very sound.

There is no federation of local primary societies into a central union yet. The broad principles of co-operation and the policy adopted by the local units are therefore at present laid down by the registrar of co-operative societies. The registrar is a paid government officer who remains in charge of his department for a few years and gives way to a new man. Under a system where the head of the department is periodically changing a consistent and uniform policy becomes impossible. A new registrar may have his own ideals which may be quite different from those of his predecessor. The experience which a registrar gains while in office is lost

to the movement on his transfer to some other appointment and there is a lack of continuity in the policy. Every effort therefore must be made to render the present control of the registrar unnecessary and to confine his duties to registering the societies and to see that they conform to the act. If a properly organized federation came into existence, it could lay down general co-operative policy, carry on the work of propaganda and even undertake the work of supervision.

At present the Bombay central co-operative institute does to a certain extent look after the propaganda work by holding conferences and conducting classes for the training of co-operative workers though it is not a legally recognised federation of the societies in the province,[1] it has its divisional branches for each division of the presidency and the districts of the presidency. It is doing useful work in the cause of co-operation in Bombay Presidency.

There is a tendency on the part of the registrars of the co-operative societies to wax eloquent over the progress which the movement has made in their provinces. If one analyses however the figures one is reminded of the very common Indian proverb " Delhi is still far." The movement is still in its infancy. In Gujarat with about 400,000 cultivating owners and tenants there were only 43,326 members in 1927 and the working capital amounted to 40,55,166 rupees or about 100 rupees per member. This is miserably inadequate for financing the current needs of the members, with the result that they have to depend for at least part of their requirements on the money lenders. According to the report of the registrar of the co-operative societies of 1926-27 the average working capital and deposits per member of the societies in the Gujarat districts was as follows:—

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1 Bombay is now governed by its own separate co-operative societies act of 1925. All the societies in the presidency must be affiliated to the Bombay Central Co-operative Institute.

Deposits and working capital per member.

—	1927		1925		1920		1915	
	D.	W.C.	D.	W.C.	D.	W.C.	D.	W.C.
Ahmedabad ...	16	80	13·1	65	6·9	29	1·7	28
Kaira ...	10·9	59	10·1	52	6·2	39	1·5	29
Broach ...	33·6	137	26·3	78	11	60	2·5	42
Surat ...	21	137	14·4	96	9·6	79	6·2	90

The deposits on the part of the members are far from being satisfactory and sometimes it is still necessary to resort to the system of compulsory deposits by which a fixed percentage of each loan is deducted at the time of advance.

Another feature of the movement is delay and lack of punctuality on the part of the members in their return of the loans. For the whole of presidency the outstanding arrears in 1926-27 were 2,83,84,924. In two districts of Gujarat alone Kaira and Ahmedabad the arrears stood at Rs. 8,65,070 out of which 4,21,771 were unauthorised arrears. One of the most important factor in the successful working of the co-operative credit societies is the prompt and regular payment of the loans by the members.

The co-operative movement in Gujarat and the rest of India has been largely confined to agricultural credit. There are 534 credit societies in Gujarat. Amongst the non-credit societies, the only other important development in co-operation for the needs of agriculture is the growth of cotton sale societies which number about 16. There are a few purchase societies, six cattle insurance societies which are not at all working satisfactorily. The Bombay Provincial co-operative bank through its branches does the business of sale and purchase societies. It has also separate shops attached to its branches. The supply societies for manure, seeds and imple-

ments however are mostly in a state of stagnation. Several societies were wound up and their number shows a decline. These societies are formed on the basis of a single village and consequently they have small chances of success, as they cannot handle sufficient goods or do sufficient business to employ an expert secretary or manager.

The basis of these societies must be a taluka or a group of villages. There is a splendid scope for extension of co-operative movement in the agricultural field in Gujarat. What is required is good leadership and organisation. The cultivators must first come to learn that if they want to succeed they must combine. Unless this knowledge is present among them, co-operation can never succeed.

One of the most important causes of the backwardness of agricultural industry in India and Gujarat is no exception to it, is the absence of facilities to secure good seeds. The usual dependence of the cultivator upon the village grain dealer for the supply of his seed is a great hindrance to the improvement of Indian agriculture. Co-operative supply societies, here, have a very useful field of work. Apart from the supply of seeds, all the requisites of the cultivators like manure, and implements could be more cheaply supplied and the cultivator could be sure of obtaining a good quality.

There is an ample scope for co-operative societies for cattle breeding and cattle insurance in Gujarat. Gujarat has long been famed for the excellent breeds of its cattle known as the Kankrej and Wadhyial cattle. The circumstances under which the cattle breeding industry was successfully carried on by Rabaris in the old days have considerably changed, and, to meet with the changing times the industry, if it is to be at all successfully organized and if the breed of Gujarat cattle is to be preserved must be co-operatively organized. There are hardly any good cattle breeding societies in the whole of Gujarat. Cattle, however form the most important part of agricultural stock of the Indian cultivators serving for draught as well as for milk supply.

There is no other field in which co-operative efforts could be more useful than the insurance of cattle in Gujarat. The average Gujarati cultivator is by no means rich. Loss of cattle would mean to him the loss of his most expensive and useful source of capital. He will have to run into debt to buy new cattle and the loss of cattle is one of the most important cause of the indebtedness of the ryot. There is no civilised and progressive country where farmers do not get facilities for insuring their live stock.

Insurance societies for cattle should be started in almost every taluka in Gujarat and if they are not likely to succeed without State help, I think it would be a very wise and far seeing policy for the government to subsidise these societies. There are about six cattle insurance societies in Gujarat. However only one of these that at Borbheta in Ankleshwar taluka has been working steadily for last eight or nine years. The rest are comparatively new and have done insurance business only for two or three years. There are very few cases of members voluntarily insuring their cattle. They insure owing to the moral pressure of co-operative workers or co-operative credit societies. As a matter of fact it is difficult to induce people to insure their cattle, when they are reluctant to insure their own lives and when they look upon insurance with a certain amount of superstitious fear. It is therefore absolutely necessary that a well organised propaganda should be carried on by the workers in the co-operative field and even by officials of Agricultural Departments. I believe that the people of North Gujarat who value their cattle more than cultivators in any other part of India might respond to this kind of propaganda. At present the cultivators complain that the premium charged is too heavy. The nominal amount is 5 p.c. but in practice it works out at $7\frac{1}{2}$ p.c. The insurance companies however cannot reduce it, as they have not sufficient acturial information about the cattle. The societies find it difficult to re-insure the cattle which they have insured. I am giving a few figures showing the rate of progress which the movement has uptil now made in Gujarat.

—	Number of societies.	Number of members.	Amount risked.	Premium collected.
1	2	3	4	5
Ahmedabad	3	131	5310	334
Kaira	2	100	...	...
Panchmahal ...	...	...	...	...
Broach	2	190	5410	271
Surat	...	...	...	...

—	Number of animals insured.	Animals lost.	Claims paid. Rs.
1	2	3	4
Ahmedabad	43	3	40
Kaira	...	...	...
Panchmahal	...	...	...
Broach	102	6	109
Surat	...	...	...

Co-operative dairies in Gujarat have a great future before them. There is no part of Bombay presidency more fitted for the successful working of dairy industry than Gujarat. The individual farmers or gavlis cannot command all the advantages which a co-operative society can. They can have a larger steadier and more uniform supply of milk. They can have their own creameries where they can separate cream from the milk and manufacture butter. They can

Report of the committee on cattle insurance societies appointed by the Gujarat branch of Central Co-operative Institute.

grade and pack this butter and market it much more efficiently than any single individual can do. Experiments have been made for starting co-operative labour societies copied on Italian models and for farming jointly on co-operative principles. In a country like India where farms are minutely subdivided, and where therefore expensive machinery cannot be used, and where employment of large capital would not be remunerative unless the farms were more compact and larger in size than at present co-operative farming would be a great success. Another important field in which Italian example would greatly help India is the letting of farms on co-operative principles to be worked by members afterwards jointly or individually.

I have discussed in connection with marketing organizations, the necessity of co-operative sale societies in Gujarat. I shall not attempt again to discuss the advantages of co-operative marketing here, but mainly review the work already done in this field in Gujarat. According to the report of the Registrar of Co-operative Societies, there were in all 16 sale societies in Gujarat in 1926–27. All these sale societies were organized for the sale of cotton. In all there were 53 sale societies in the presidency, out of which 31 societies did the work of selling cotton and there were 5 societies for paddy, 1 for tobacco, 1 for chilies, 2 for potatoes, 2 for gul and 11 for miscellaneous purposes. The operations of the cotton sale societies were as follows:–

Value of cotton sold. Rs.	Cotton seeds. Rs.	Profit. Rs.
40,39,798	1,33,432	41,051

The Hubli and Gadag societies in Dharwar sold cotton to the value of $8\frac{3}{4}$ and $4\frac{1}{4}$ lacs and 16 cotton sale societies in Gujarat sold cotton to the value of $13\frac{1}{2}$ lacs. The Gujarat cotton sale societies were the results of an experiment started

in 1919 by cultivators of the three villages of Sonsek, Islampur and Kareli. They found that the prices of cotton had gone down. They therefore pooled their resources, got their cotton ginned and sold it and obtained a rather better price. Of these three villages Sonsek alone persisted in this experiment and after two years of success the members got the society registered in 1921. Originally there were only 13 members and now they are increased to 300. The share capital has gone up to Rs. 25,000 and their total sales amounted to Rs. 4,30,000 during the year 1923–24. The benefits which the members derived in the shape of higher prices than non-members, is estimated to have amounted until the last season to Rs. 84,000. In 1922–23 efforts were made to organise more societies, and such societies were organised in Sayan, Diva, Isalampur, Kareli, Khanpur, Deh, Panoli and Sarod. In Kaira, a society in Thasra taluka was started. Efforts are now being made to have at least one cotton sale society in each Gujarat Taluka where cotton is grown. These societies work on the following plan.

(1) They distribute seeds amongst the members who are bound to accept it.

(2) Members are bound to bring all their cotton to the societies which pool the cotton of all the members and get it ginned and pressed.

(3) Non-members' cotton is not allowed to be brought to the societies for sale.

(4) Societies charge a certain commission per Bhar not exceeding a rupee and after deducting ginning and pressing expenses pay the remaining amount as the price of the cotton to the members at a uniform rate in proportion to the quantity of cotton brought by them to the societies.

(5) Sales are spread over the whole cotton season.

(6) Loyalty is strictly insisted upon.

(7) The entire management is left to a manager who is picked out from the cultivating class and who knows something about the business.

The societies are allowed to have a fairly extensive area and if possible, a taluka is made the basis. A penalty is imposed if members sell their cotton privately. The penalty may take the form of a fine or forfeiture of shares or even a civil action may be instituted.

Gujarat societies differ fundamentally from those in Karnatic. The Karnatic societies have been formed on individual basis by collecting in the first instance a few important persons in the market town concerned, including agriculturists, cotton dealers, landowners and private individuals. The societies subsequently endeavour to enrol as members the primary societies within the area of operations. The cotton of non-members is sold as well, the policy being the greater the volume of business, the greater the turnover and the surplus available for expenses of management. The produce is not pooled. The cotton is sold by auction. The Karnatic societies are much less co-operative in character though they have a wider scope of business. The Gujarat societies however have recently united themselves into a federation and it is to be hoped that they will thus secure all the advantages of such societies in the West.

The success of these sale societies largely depends upon sufficient volume of business and efficient management. If they can always guarantee a large supply of a better type of cotton they would never find it difficult to obtain customers. The millowners would soon be induced to deal directly with them.

It is impossible to treat exhaustively in a thesis like this all the lines of activity in which co-operative organizations would be of great help. I would however allude to two important fields in which co-operation has a great future, before I close this chapter. The one is the need of the supply of long term credit and the other is the formation of taluka development associations. These associations have been recently started in Bombay Presidency owing largely to suggestions and support of Sir Chunilal V. Mehta. The Taluka develop-

ment associations if well organized may take the place in Gujarat of the agricultural syndicates in France. The movement is still in the infancy, but there is a great future before it. They can do the propaganda work as far as all co-operative activities are concerned. They can help the agricultural department by spreading and making known to the cultivators any improvement which the agricultural department may have made in the practice of cultivation or the selection of better type of seeds or better varieties, or in the possibility of more advantageous use of certain implements not at present employed by the cultivators. One of the criticisms levelled against the agricultural department to-day is that the actual cultivator rarely comes to know of anything done by the department and which is likely to be a source of advantage to him. The taluka associations may even do the work of the supply societies and obtain for the cultivators of the taluka good seeds, implements, manure and even other requisites of daily life which the farmer may need.

As regards long term credit, I believe at present it is by far the most important question which co-operation has to tackle in India. The co-operative credit societies supply credit for short periods only. Their function is to finance the working current expenses of the farmers. The loans which they give run from one to five years at the most, but they are never given for a longer duration than five years. The co-operative credit societies depend for their finances largely upon deposits of the members and outsiders and advances from Central banks. It is not possible for them nor is it safe for them to have their money locked up in long term loans. It is not advisable for ordinary co-operative credit societies to take up the business of long term credit. Long term credit is usually given on the security of landed property. The loans are advanced after proper assessment of the value of the property offered for mortgage and after properly examining the legal title of the mortgagor to the property. The scheme of enabling the existing co-operative credit societies to grant long term loans therefore would be inadvisable. In Bombay presidency at present some of the A and B types of

credit societies are permitted to grant long period loans but they have not been able to do much business. The Baroda State put at the disposal of the Baroda Central Co-operative bank some funds for redemption of old debts and granting of long term credit but there the experiment has not met with any marked success.

Long term credit is necessary for redemption of old debts or for the introduction of permanent improvements on the land like sinking of wells or for the consolidation of holdings, and buying costly machines like oil engines and power pumps. We have discussed at some length the indebtedness of the Gujarat ryot. If the ryot is to be redeemed from this debt some sort of agricultural or land mortgage bank is absolutely necessary. We saw in the earlier chapters also that one of the causes of agricultural backwardness in Gujarat is lack of cheap capital for permanent improvements on lands and for enabling farmers to buy more expensive machinery.

" The field for agricultural improvements is too vast and too technical to be closely defined here but in a general manner the improvements may be grouped as productive and ameliorative or protective. The first of these are naturally the most important and include within their scope improvements of irrigation sources, introduction of modern farm machinery, rearing of live stock necessary for agricultural operations, and extension or fresh purchase of holdings. " [1]

A bank for supplying credit for all these operations which require money for a long period would be great boon. It might even advance money to district boards or Panchayats, as is done in some parts of Germany. These local boards need money very badly for construction of roads for transporting agricultural products for carrying out small drainage works or repairs to tanks, and construction of small bridges or culverts or rural tramways or even light railways. The most pressing need however at present is the need of good roads, for enabling cultivators to bring their products to a

1 Report of the Land Mortgage Bank Committee 1925.

market town or to a nearest railway station. The need for agricultural market roads is so great that at our present pace it would take decades to complete the programme. It is not uncommon complaint from agriculturists from outlying districts away from railway lines, that they are losing considerably in the realisation of the value of their market products for want of transport facilities. Besides this, the lack of good roads involves great hardships to the bullocks. So much so that the average life of a bullock is reduced appreciably in certain talukas, because of this. There are also some crops such as fruits which bring nothing to the farmer for want of easy transport facilities.

In Germany the problem of this long term credit was tackled long ago by the establishment of Landchaften and Ritterchaften. Their object is to obtain for their members the credit they require for land improvements by means of bonds. Originally these bonds were guaranteed by the landowners of the province collectively. In some of the oldest Landschaften this collective guarantee is still in force, either for all the estates entitled to obtain mortgages or for the estates actually mortgaged. The excellent system of valuation and almost perfect cadaster and mortgage registers allow more and more the substitution for the collective guarantee of a guarantee consisting of the special reserve funds of the landschaften or of a limited guarantee of the members.

The formation of these institutions goes back to Frederick the Great. There are now more than 25 of such institutions. They have flourished best in Prussia and the eastern provinces. This form of co-operation furnished German agriculture in 1909 with total loans on mortgage of more than 3,490,199,810 marks.[1] This is a considerable sum which it would obviously have not been easy to obtain from the private and purely capitalistic banks and above all at so

1. Co-operation in Europe published by the International Institute of Rome.

low a rate of interest, for these societies are satisfied with the rate of interest which does not exceed 4 p.c. The whole scheme was suggested to Frederick the Great by a Berlin merchant named Buring. It was based upon the fact that the soil of the country is its greatest national asset. The farmers who own the soil can easily get credit if they give this asset currency. The land owners must combine and form a society pledging the security of their properties. The landschaften were meant for large land lords but now societies of this type exist for small landholders and peasants also. There is always however a limit to the minimum value of the land which may be mortgaged to the societies. This limit corresponds to that amount of land on the produce of which the owner can live. The landschaften therefore serve merely as intermediaries between the land that needs credit and the capital that seeks investment. Its aim is to afford the advantages which the mortgage bond payable to bearer has over the individual mortgage deed, namely the possibility of marketing the former at any time and the added security of the institution and of those joined together under it.

The example of Germany has been followed by most of the European countries and there are now agricultural banks or land mortgage banks which are variations of the old German landschaften in several countries in Europe. It is impossible to examine all the various types of mortgage banks, but it would be worth while to examine some of the mortgage banks in Germany like the Bavarian and the Dresden Banks because they were meant largely for peasant proprietors. There are some who advocate the adoption of the recently started American scheme of federal loans in India. It has been to a large extent the model for a scheme presented by a committee appointed by the Baroda Government for formulating a scheme of land mortgage banks for the State. We can only refer to the American scheme in the barest outline.

The Bavarian agricultural bank at Munich and the agricultural credit association at Dresden are both co-operative societies and they are both meant for peasant proprietors.

[1]Under the Bavarian scheme a hundred mark share must be taken for every 5000 marks borrowed. There is a limit to the maximum holding of the shares which is 1,000 shares and therefore no one can borrow more than 5,000,000 marks. The shares are returned when the mortgage debt is paid. The dividend on shares is limited to 4 p. c. Under the Dresden scheme no one can hold more than one share. The amount payable depends upon the money borrowed, varying from 5 marks to 100 marks. In Bavaria liability is limited to ten times the value of shares. In Dresden the members pledge their entire landed property. Both the banks were aided by the State in their initial stages. Any one can get a loan if he owns not less than $1\frac{1}{4}$ acres in Dresden and in Bavaria if he has enough land to justify an advance of 500 marks. Only first mortgages are accepted. In Bavaria second mortgage would only be taken when the bank holds the first mortgage. If the loan is required to pay off an old mortgage the money is paid to the mortgagee direct either by the association itself or through its agents. If the maximum loan that can be sanctioned is not sufficient to clear the old mortgage no loans will be made. Before a loan can be made the land must be properly valued. The importance of careful valuation can scarcely be exaggerated. If the valuation is over cautious the credit is thereby restricted if it is over liberal it becomes a source of danger to the bank. There are various methods of assessing the value. It may depend upon the land tax or independent assessment may be made by impartial assessors. As a rule the loan does not exceed 50 p. c. of the assessed value. In Bavaria the bank sends its own agents to report upon the value of the property offered for mortgage.

Mortgage bonds are issued in series varying from £ 25,000 to £ 50,000. They are bought and sold in the stock exchange and carry fixed rates of interest. The borrowers are paid in cash. Certain deductions are made from the loan for expenses of administration and stamp duties. Both the banks found it difficult to sell their bonds. In Bavaria the

1. Co-operation in Germany, Italy and Ireland by Darling.

Commercial banks were given a favourable commission to induce them to do their utmost to sell the bonds. Government pressure was, also, applied to public trusts, local bodies and other institutions to buy these bonds. Both in Bavaria and Saxony the bonds have been declared trustee stock. The important principle to be observed by the land mortgage banks is that the issue of the bonds should not exceed the loans. Accordingly as loans are repaid bonds are redeemed either by purchase or withdrawal. The withdrawal is done by annual lottery. For purposes of repayment in Saxony there are two schemes. One extends over 59 and other over 78 years. In the first case 9/20 per cent of the mortgage debt is repaid each year in the latter only 1/5 per cent. In Bavaria the borrower must repay at least ½ per cent of the debt every year. These repayments which are made every six months are credited to a sinking fund which is allowed to accumulate at compound interest till sufficient to extinguish the mortgage. Loans cannot be recalled except under special circumstances. A borrower however may repay soon.

The management is in the hands of a committee of management. There is also a board of supervision. The members of the managing committee are paid officials. In Bavaria owing to the large financial interest of the government, there is a representative of the government who attends the meetings of the board of supervision and watches the bank's dealings in bonds has a voice in the control of the bank's affairs. The Dresden association is also controlled by the Government. In almost every country which has land banks the government exercises some amount of control.

The peculiarity of both these German banks is that they can advance money to local bodies on the security of their revenue and resources. The operations of the banks show that a large part of their business was done with small proprietors of 25 acres or less and a large per cent of the outstanding loans were for 5000 marks or less. The object of every loan has to be stated, and the bank may reject an application, if it is not satisfied with the reasons.

Federal Farm Loan System.

The American system of long term credit for the farmers is extremely interesting and particularly useful for those interested in questions of rural economy in India. It is the result of careful inquiry of the existing European institutions by commissions of experts. The American system is co-operative, though there is a considerable element of State help. The farm loan system was brought into operation in the United States of America in 1916. The government has established a farm loan bureau which is in charge of the farm loan board. The farm loan board controls the whole machinery of long term credit introduced by the Act. The board consists of five members appointed by the President of the U. S.

The U. S. is divided into twelve districts for the purpose of this act and for each district there is one federal land bank. In each district there is one registrar to assist the farm loan board in supervision of the issue of farm loan bonds. The bonds must be approved by the federal farm loan board before they are issued and the mortgage securities must be properly examined. In the initial stages, each land bank is controlled by directors appointed by the farm loan board because the capital has been largely provided by the government, but as the members contribute the capital after a certain stage, the government capital is to be withdrawn and the control of the land bank to rest with the share holders. The board of directors will then consist of nine members, six to be elected by the share holders and three to be appointed by the government to supervise the operations of the bank in the interest of the public bond holders. Finally there are to be local farm associations through which farmers can get the loans from the federal land banks. These local associations endorse the mortgage security. The expenses of the local associations are met by contributions from the borrowers.

The minimum amount of stock on the subscription of which each bank could start its business was kept at 7,50,000

dollars. The stock however was originally subscribed by the government. The act however provides for the gradual extinction of the government capital and the substitution of the members' capital for it. Each borrower must subscribe to the stock capital to the extent of 5 p. c. of his loan, through his farm association. When the members' contribution reaches to 7,50,000 dollars the government capital is gradually withdrawn. Non-borrowers can subscribe to the stock capital but they cannot vote. The banks are allowed to issue bonds upto 20 times their capital and surplus. The capital of the bank however automatically increases with every fresh borrowing.

Federal farm loan bonds are lawful investments for all trust funds. In order to make the bonds popular and to facilitate their sale, government in the beginning secured the support of certain commercial banks. The Government however had to buy most of them at par as it was difficult to find a market for them in the beginning. The bonds issued by the federal land banks run for a period of 20 years but are redeemable any time after five years from the date of issue. The bonds are exempt from income tax and the mortgage deeds are exempt from all taxation. The loans are made for periods varying from 5 to 40 years, and the repayments are made by a scheme of amortization. The borrower can repay the debt any time he likes after the first five years. The difference between the interest on the bonds and the loans should not exceed 1 p. c. and in no case should the interest on loan exceed 6 p. c. The loans are given on first mortgage only. They are given for the purchase of land of agricultural value, or equipment, fertilisers and live stock necessary for the farm, to erect building on the farm and to liquidate old debts. The farm on which a loan is given must however be sufficiently large or productive to yield at the hands of an average farmer an income sufficient to maintain his family and to meet the interest and amortization charges. Loans cannot be given for an amount higher than $\frac{1}{2}$ the estimated value of the land plus 20 p. c. of the permanent insured improvements of the land. The mort-

gagor must furnish proofs of his legal title to the property offered for mortgage. Each bank is required by the act to carry 25 p. c. of its net earnings to a reserve fund and each farm loan association 10 p. c. as an additional security against bonds in circulation. The rest is distributed as dividend to the shareholders.

Land Mortgage banks in India.

In Punjab experiments have been started to supply long term credit by land mortgage banks in the district of Jhang and Mianwali. In Madras the government is contemplating starting four district mortgage banks. As early as 1916 a scheme was prepared for establishment of land mortgage banks in Baroda, for redemption of the old debts of the agriculturists.

In the Bombay Presidency the Gujarat divisional co-operative conference appointed a committee to consider the question of land mortgage banks. This committee recommended that the business of long term credit should not be done by the ordinary agricultural credit societies or central banks but a separate bank should be established for that purpose. The membership to the bank should be thrown open to all cultivators on their taking up at least one share of the value of Rs. 50. Borrowers must contribute to the extent of one twentieth of their loans. The liability of the shareholders should be limited. Loans should be made only on the security of economic holdings. The bank should however be allowed to give loans to render an uneconomic holding economic by purchase of a piece of adjacent land or sinking of well or carrying out some permanent improvement. The valuation of the property offered for mortgage should be made by experienced persons having knowledge of the land revenue system. Loans should be made to the amount not exceeding 1/3 of the estimated value of the land. The bank should issue bonds periodically. The bonds in each series should bear the same rate of interest. The bonds should run from 10 to 50 years. The repayment should be so adjusted as not to cause a heavy financial strain on the

borrower. The bank should be given power of speedy foreclosures by special procedure. The bonds should be recognised as trust securities and the government should guarantee the payment of interest on the bonds issued to make this type of security popular with the public. The government should in the first instance invest some funds in them. The Imperial Bank and the provincial co-operative banks and insurance companies should be induced to invest part of their money in these bonds.

The bank can only be a success and a useful institution if it gives credit to the agriculturists for long periods at a rate of interest not exceeding 6½ p. c. This could be only possible if assistance is given to the bank in its early stages by public bodies and by the government, which, however, could do this without financial loss.

A very interesting scheme was proposed by the Burma Government. Though it was not in any sense co-operative in its principles it was largely a government affair. There was no share capital. The funds were to be provided by the money got by the Government from the control of rice export. The board of supervision was to be nominated by the government though it was to consist of men having revenue experience, banking experience and knowledge of agriculture and trade. The initial expenses of administration were to be met by the government and all accounts were to be audited by government officials. The loans should be given to co-operative societies as well as individuals, and not to exceed 60 p. c. of the estimated value of the land. The bank should have a right to sell by auction the land of the defaulters without intervention of the civil court. From the profits a reserve fund was to be built up. The amount of loans and the amount of bonds in circulation were to be published in the Gazette every six months. The Baroda government scheme proposed by the committee appointed in 1924 has largely followed the American example. The initial capital is to be supplied by the State but to be gradually replaced by the capital of the borrowers. The borrowers must contri-

bute capital in proportion to their borrowings. In the initial stages, the management of the bank is to rest with the directors nominated by the government but as the government capital is replaced by the members' capital, the management is to be taken over by directors elected by the members. There could be a few government representatives on the board as in U. S. Just as in U. S. local association of farmers are to be started through which the farmers can borrow; in the beginning the cultivators can borrow directly. The repayment is to be made by a scheme of amortization and no loans are to be given on uneconomic holdings. The duration of the loans is to exceed five years and no loans below Rs. 500 should be given. The loans should not exceed $\frac{1}{2}$ the estimated value of the mortgaged land.

I have dwelt at a weary length on the subject of land mortgage banks, because of their great importance for Gujarat and the rest of India. It is absolutely necessary that at an early date some sort of land mortgage bank should be started in Gujarat. I believe that the bank should be co-operative in its character, though the government should guarantee the interest on its bonds. A bank might be started for each division in the Bombay Presidency and there might be a central board at Bombay to control the whole scheme. Loans should be given on first mortgage alone. There should be local cultivators' associations in each district through which the loans should be given. The government should help these banks in their early stages by investing its money in their bonds and if necessary providing the capital, but only in the initial stages. Repayment should be made by a scheme of amortization. The bonds should be recognised as trust securities. The control and management of the banks should eventually be with the share holders though there should be government supervision in the interest of the public bond holders. The interest on the bonds should not exceed $5\frac{1}{2}$ p.c. and the loans should not be advanced at more than $6\frac{1}{2}$ p.c. The services of some officers trained in land revenue business might be loaned to the land mortgage banks for properly assessing the value of property mortgaged. These

banks should also be empowered to advance money to local boards which they may require for construction of better roads, small irrigation wells or repairing tanks, building embankments or for any productive scheme.

CHAPTER X.

Cattle in Gujarat.

We have briefly surveyed the agricultural wealth of Gujarat. The amount of this wealth largely depends upon the qualities of soil determined by nature and the skill and industry of the people working on the land.

Labour, working alone on the land, however, cannot fully exploit the wealth which it is capable of yielding. There must be capital to assist labour, if its full productive capacity is to be exploited. We saw in the earlier chapters that the Gujarati agriculturists are sadly lacking in the supply of capital. They are not in a position to use better implements, costlier though more useful machinery, or artificial manures, because capital is not easily available for the cultivators and if it is available, the rate of interest is so heavy that the investment of capital ceases to be remunerative. In these circumstances, the use of capital instead of being aid to further production, becomes a source of indebtedness. Apart from manure and implements and machinery, the important capital resource of the agriculturists in Gujarat is cattle. All over India cattle form by far the most important part of the cultivators' stock of wealth. They are used as draught animals and they are not likely to be displaced from that position for a long time in India. All the field work which is too heavy to be done by human labour is done by bullocks, or in some parts by buffaloes. The use of power machinery is almost unknown, though tractors are to some extent used now in North Gujarat where deep ploughing is required. Cows, and still more cow buffaloes are used for the supply of milk. There is no country in which there is so much demand for milk as India.

In Gujarat, the cow is not so popular for milking purposes as the buffalo which yields milk containing larger quantities of fat of a higher melting point which is so useful for cooking purposes. The buffaloe's milk is considered richer and more nutritious. The cattle also yield the largest supply of manure ordinarily used by the Gujarat cultivators.

The cattle thus play a very important role in the rural economy of Gujarat. We will now, therefore, examine the wealth of rural Gujarat in live stock. We must look at this wealth not only from the quantitative point of view but we must examine the quality of Gujarat cattle and the conditions under which the cattle are reared. The prosperity of the Gujarat's agricultural industry is closely connected with the supply of good and vigorous cattle. From a quantitative point of view the quinquennial cattle census will give us the idea of the number of live stock in Gujarat. I have excluded horses, sheep and goats from these figures and included, only the bovine cattle both plough as well as milch cattle. I quote the figures which I got from the latest district gazetteers and season and crop reports.

1891	...	...	1,520,719
1901	...	...	828,502
1905–06	...	...	1,208,217
1909–10	...	...	1,387,668
1914–15	...	...	1,830,300
1920	...	...	1,641,164
1925	...	...	1,796,980

The statistics reveal a sharp decline in 1901 which was largely due to the great famine of 1899–1901. Famine always causes a greater hardship on cattle than anything else in India and every famine is attended with a considerable diminution in the live stock wealth of India. It is difficult for the cultivators during bad years to get fodder for their cattle. As even in good years, complaints are heard from various quarters about the shortage of fodder for cattle, the problem becomes acute during famine years. The famine commission of 1901 drew especial attention to the problem of

fodder shortage and consequent cattle mortality during the famine. During the famine of 1900–1901, the government had to buy the cattle from the agriculturists, who were not in a position to feed them and were consequently abandoning them, and the present Northcote cattle farm at Charrodi is largely the result of that policy. The decline in the number of cattle again in 1920 from that of 1914–15 was due to the famine of 1918. The set back, however, is not so bad as that of 1901.

The net area under cultivation in the years 1891, 1901, 1910, and 1920 and 1925 was 3,446,609 acres, 2,499,642 acres, 3,053,852 and 3,818,862 acres 4.172,225 that is there was roughly 1 head of cattle for 3·3, 3, 2·2, and 2·3 2·2 acres of land in 1891, 1901, 1910 and 1920 and 1925.

The number of plough cattle for

1891	4,96,593
1901	3,64,672
1910	4,45,441
1920	5,05,018
1925	5,22,396

that is there was one pair of cattle for 14 acres, 14, 14, 15 and 16 in 1891, 1901, 1910, 1920 and 1925 respectively.

The live stock wealth in comparison with the area under cultivation is distinctly showing a decline.

The decline in the number of cattle alone is not a matter of so grave an anxiety as decline in its quality. There is a cry from almost every quarter in India from the agricultural officials and the cultivators, that the quality of cattle in Gujarat is fast declining and something must be done immediately to stop this in the vital interests of the agricultural industry of the province. The evidence before the last Royal Agricultural Commission also largely emphasised this fact. There are various factors which are responsible for this deterioration but the existing state of things, with a well thought out policy, could easily be remedied and the wealth of Gujarat in live stock could be increased both from the quantitative and qualitative point of view.

At one time Gujarat was well known in the Bombay Presidency for the quality of the breed of its cattle and the Kankrej and Wadhyal cattle were well known all over the presidency. The climate of Northern Gujarat and Kathiawad is particularly favourable for the rearing of sturdy and strong cattle useful for draught purposes. In Kathiawad there are plenty of places with extensive ranges of good grass land with fairly abundant pasturage. There is no excessive rainfall and the winter is fairly bracing. All these factors are favourable for rearing of good cattle. The finest cattle of Bombay presidency are bred in North Gujarat in tracts of grass land which extend round the Rann of Cutch and Northwards through Radhanpur, Wadhyal, Kankrej and Palanpur. The deep alluvial loamy plains of Gujarat are very suitable for rearing young stock.

Cattle breeding is carried on in Gujarat largely by breeders known as Rabaries. 1 They used to breed their cattle at one time by migrating from place to place with the herds headed by a selected bull, in search of food and water. They bred unconsciously by selection and by the survival of the fittest. There was only one selected bull, there was little chance of the cows being crossed by another bull than one intended for the purpose. In course of their migration from place to place, diseased, sick and unfit were naturally abandoned on their way, so only healthy and good cows remained in the herd. Absence of communication kept each type pure. The Rabaries sold the young stock to the cultivators in Gujarat who looked after their cattle much better, than those in any other part of the presidency. In Gujarat, the cultivators usually grow fodder crops for their cattle and there are always small strips of land forming the boundaries between the adjacent fields on which during the monsoon, the cattle would graze. These professional cattle breeders are fast dying out in North Gujarat, as this migratory life which enabled the Rabaries to rear their cattle without any expenses has now become impossible. Cattle raising is now confined to villages

1 Mr. Bruen's Evidence before the Royal Agricultural Commission 1927. Vol. II. part I. pp. 399 to 437.

and there is a distinct decline in the quality of the cattle raised. The cattle are kept more or less at one place but at the same time they are allowed to roam and graze on the village common grounds, if they exist, and to pick up what they can. There are as many adult males as there are females. The cattle are continuously mixed up and very often the cows are crossed by undesirable bulls.

In India there is a strong religious objection against the castration of bulls, and religion among the Hindus forbids the slaughter of bulls and cows. There is no weeding out process as in Europe and other meat-eating countries, and good and bad animals are allowed to live and mix indiscriminately, which results in considerably deteriorating the breed. When disease breaks out, it spreads and those that survive are unfit for further breeding purposes. The net result of all these factors is under-feeding, because there are too many animals fit as well as unfit grazing on the limited space available, and promiscuous in and in breeding. Naturally in such circumstances deterioration would set in.

To the Rabaries cattle breeding has ceased to be a paying industry, and the ryots have not yet learnt the importance of scientific breeding. The decline in the quality of cattle is clearly seen from the fact that at one time cattle were actually exported from Gujarat to South America and particularly to Brazil, but the cattle export trade now has entirely disappeared. The cattle fetch a fairly good price in India but still there is no incentive for better breeding. The average prices of a cow and its products 25 years ago, were, cows from Rs. 10 to 60, bullocks Rs. 40 to 200 a pair, milk from 16 lbs. to 20 lbs. per rupee and ghee at the rate of 4 lbs. per rupee, while to-day the price of a pair of bullocks would be anything from 150 to 500 rupees, milk 8 to 10 lbs. a rupee, while ghee would be ½ to 1 lb. a rupee.

The causes mainly responsible for the decline of cattle in Gujarat are

(1) religious prejudice to the slaughter of disease infected cattle,

(2) no attempts made to isolate undesirable bulls from the herd or castrate them,

(3) the starvation of female stock. From birth cows are neglected with the result that the calf gets a set back in the embryo,

(4) little importance is attached to the selection of the sire,

(5) famines and their consequent havoc and,

(6) shortage of fodder.

Cause No. 1 and No. 2 do not require any further explanation. Undesirable bulls should be isolated and castrated to prevent them from doing any harm. Cause No. 3 requires a further elucidation. In Gujarat the buffalo has superseded the cow as a milk-producer. The bulls are used as draught animals and therefore, valued but the cow has no economic value except as a producer of bulls. It is, therefore, neglected. In the buffalo from the economic point of view, the male is entirely useless to the cultivator. It can never supplant the bullock for field work. The cow and the male buffalo are, therefore, both neglected. The neglect of the cow naturally results in the deterioration of the whole breed. The only solution is the breeding of a dual purpose cow which will be valued as a milk-producing animal as well as for production of bullocks required by the farmers for use as draught animals. Experiments are being tried to improve the breed of the cow from the milk-yielding point of view but it is not likely to displace the buffalo for a long time to come. If the cows, however, could be made economically more productive by greater yield of milk they would not be so badly neglected. The Gujarat cattle, as a matter of fact, have been largely bred for the purposes of serving as draught animals. It would be desirable now to breed them for dual purposes.

The Government of Bombay have been making attempts since 1861 to improve the breed of the cattle. The first step it took after extensive inquiries was to place bulls in each

district through the agency of the district local boards. In the past in India there was a custom of dedicating a bull to the god. This bull was known as the Bahamni bull. The bull was fed by the public. This custom was revived by the district boards keeping a good bull at a stud like the horse stallions for breeding purposes. This method, however did not work successfully.

In 1907, the Civil Veterinary department introduced the method of giving out premium bulls to known persons to be used for breeding purposes. Under this system a bull was purchased in consultation with the prospective premium holder. The Government paid ½ the price and the buyer paid the rest. The Government also contributed Rs. 4 a month for the up-keep of the bull. The bull after three years became the property of the premium holder.

The Government also decided to start farms for important breeds of the presidency and to produce good stud bulls. In 1918, a new section for cattle breeding was started under the agricultural department. A special deputy director of agriculture for animal breeding was appointed with necessary district and office staff. The Northcote cattle farm at Chharodi was handed over to him.

The Northcote cattle farm was originally started as a preservation society in the famine of 1899–1900. At this time some 589 cattle were bought at the average cost of Rs. 49 per head. In 1907, this farm was handed over to the Government management. It was first under the management of the Veterinary department till in 1918 it became a part of the agricultural department. Until 1919 the only aim was improvement by selection of draught qualities. Breeding for draught only meant the neglect of milk qualities with the result that they did not yield sufficient milk for the calves.

In 1921, 49 of the best cows were taken in hand and attempts were made to improve their milking qualities. For the first year the average yield was only 480 lbs. per animal. To-day the yield comes to 1330 lbs. per animal annually.

The other deficiencies of the Gujarat cattle were their late maturing. The normal age at which the animal calved or could be utilised as draught animal was between 4 to 6 years of age. The cows were all shy breeders and calved once only in 18 months or 2 years.

The policy now adopted by the Government is to make experiments on its various cattle farms to breed the cattle scientifically and to breed the following qualities :—

(1) More milk,

(2) Early maturing qualities,

(3) To breed regularity of calving.

Each year by selection the low yielders, irregular calvers, late maturing animals were sold out. By these means the yields have increased, more regular calvers are being bred, heifers are calving much earlier, and bullocks are coming into use much earlier.

Panjrapoles and Gaurakshaks are being used for the improvement of breed. In Gujarat almost every big town has its Panjrapole or Gaurakshak. Pious Hindus always maintain these institutions for preservation of cows and bulls and other animals. The services of these institutions could be easily utilised for the improvement of the stock of cattle.

Every encouragement should be given to start co-operative societies for cattle breeding. The Government should put at the disposal of these societies good bulls to be utilised for the improvement of the stock of cattle in the villages.

The veterinary department is doing useful work for the prevention of diseases. More animals are being inoculated than before. Veterinary service should be made available in every village. District dispensaries are maintained by local boards through the presidency.

At Muktesar investigations are being carried out into diseases of animals. Touring dispensaries may be more useful by enabling cultivators to make use of them without the

trouble of going to the district dispensaries which may be far from their villages. The absence of education prevents cultivators from availing themselves of the services of existing dispensaries, but with the growth of knowledge, people will realise the importance of immediate treatment.

An important factor militating against improvement of the cattle of Gujarat is excess of numbers. In many of the Gujarat villages some of the cattle are absolutely useless. A comparison with Italy will make this point clear.

In the commune of Cassino bullocks are used for tillage. The area under cultivation in the commune was 8000 hectares or 20,000 acres. There were only 440 oxen or 220 pairs of oxen. Some of the heavy work, and especially all transporting was done by horses, but even if we take into consideration the horses, there were in the commune of Cassino 440 oxen and 540 horses, or one working animal for every 20 acres.

In the two villages of Gujarat, Ucchrel and Wadhwania, in Bardoli Taluka, there were

	Cultivated area.	*Oxen.*
Wadhwania	1057 acres	124
Ucchrel	654 „	86

There was one pair of oxen for 16·2 acres, or one working animal for 8·1 acres in Wadhwania and one pair of oxen for 15·2 acres and one working animal for 7·6 acres. The total number of bovine animals in Wadhwania was 197 bullocks and he–buffaloes and 55 cows and 91 buffaloes. There were 343 animals for the cultivated area of 1957 acres or one animal for 3·3 acres. In Cassino, there were 440 oxen, 808 cows, 18 bulls and 229 calves, or 1405 animals for 8000 hectares, or one animal for 14·2 acres. To understand the difficulty of getting fodder for the cattle, one must look at the proportion between the area under grass and culturable waste and the number of animals. In Wadhwania there were 153 acres under grass and 17 acres fallow. There were, therefore, two bovine animals for one acre of land devoted to fodder crop. In

Cassino there were 400 hectares under cultivation of forage crops and oats for 1404 bovine animals, and 540 horses. There were 1000 acres under fodder crop for 1900 animals that is to say, 1·9 animals for one acre devoted to fodder crops. There is no hope of improvement in the cattle of Gujarat until the cultivators realise the importance of weeding out useless animals which are a burden on the land and constitute a waste from the economic point of view.

CHAPTER XI.

Marketing and Transport.

There is no problem of more vital importance to the cultivator than that of marketing his produce. This important problem, till quite recently had been neglected almost everywhere. It is only in the United States that systematic study of that question in all its aspects, is pursued vigorously. The Board of Agriculture and Fisheries and the Empire Economic Committee have examined systematically the problem of marketing the products of Great Britain and the British Empire.

The invention of rapid means of communication, and greater facilities of transport have brought into greater prominence the marketing question. Before the era of cheap and rapid transport agricultural industry everywhere was in a self-sufficing stage. The farmers grew what they needed and consumed most of what they produced. Their market was confined to their little villages or small areas which could be easily accessible with the means of communication at their command. There were no important questions of marketing. Prices naturally fluctuated according to the condition of harvests. A good and abundant harvest meant cheap prices for the cultivators, while a bad season would naturally bring high prices. There were sharp differences of prices between two regions, but as transport was so expensive, goods could not be brought from the region of low prices to one where there was a higher price level. Mr. Moreland, for example, remarks that in 1619, the rate for conveyance from Agra to Gujarat by way of Burhampur was Rs. $14\frac{3}{4}$ for a camel load of approximately 500 lbs. "We find that the cost of carrying

100 lbs. a distance of 100 miles, in Northern and Western India ranged between ½ and ¾ of a rupee, exclusive of anything required for payment of armed guards and inland custom duties. This cost could only be borne by goods of high value per unit of weight, it was absolutely prohibitive in case of ordinary agricultural produce." At the end of the 16th century the normal price of wheat in North India was about 185 lbs. per rupee. Transport of 100 miles would have sufficed to double the price and transport to the consuming markets of Gujarat would have multiplied the price from five fold to eight fold. The price of wheat in Gujarat was 85 lbs. per rupee but still it was unprofitable to bring the wheat from North India to Gujarat.

A great revolution has been brought about in the economic life of the world owing to the inventions which have considerably cheapened transport and made communications between different parts of the world so rapid. In India the old self sufficient village economy is gradually disappearing. The agricultural industry is getting slowly more and more commercialised, though even now the farmers in Gujarat grow to a very large extent what they require for their own consumption. Yet more enterprising farmers grow cotton, tobacco, oil-seeds, fruits and vegetables for distant or easily accessible markets. The area under cultivation of cotton would naturally depend upon the market price of cotton which in its turn would be affected by the price of American and Egyptian cotton. Railways and the building of good roads, therefore, have a very important bearing on the agricultural industry. The railways have made the whole of India one market for many important commodities and have made the produce of one region available to the others.

In India to-day there are 38,579 miles of railway. The policy of establishing railways in India was the work of Lord Dalhousie. The modest beginnings made during his time have now resulted in a fairly extensive net work of railways throughout India. The following figures will show the progress of railway extension in India :—

		Miles.
1890	...	15,865
1895	...	18,756
1900	...	23,640
1905	...	26,805
1910	...	30,542
1912	...	31,981
1919	...	36,616
1923	...	37,618
1926	...	38,578

In Gujarat there were in 1912, 400 miles of railway but since then there has been considerable extension. The B. B. & C. I. Railway which runs from Bombay passes through Gujarat and connects it with Rajputana, Central India and Northern India. This main line is connected with smaller lines all over Gujarat like the Tapti Valley, Ahmedabad Prantij and the State Railways of Gaekwad. The detailed figures of Gujarat railways are as follows :—

	Miles in Gujarat only.
Bombay Baroda and Central India Railway.	33·78
Tapty Valley	155·72
Ahmedabad Prantij	88
Gaekwad' Mehsana	230
Palanpur Deesa	17·28
Broach Jambusar	29·69
Champaner Shivrajpur	33·49
Godhra Lunavada	25·45
Nadiad Kapadvanj	30·06
Rajpipla State	39·24
	933

It is true that there is room for further railway expansion. There are still many villages in Gujarat which have neither good roads nor easy access to any railway station. So that

1) Statistical Abstract for British India.

it is impossible for the cultivators to market their produce efficiently and advantageously. The question of good metalled roads is now of paramount importance for stimulating the agricultural industry of Gujarat. The roads in many villages of Gujarat are still execrable. Long ago a settlement officer of Bardoli Taluka, describing the road from Bardoli to Surat remarked " Nothing more execrable could be conceived and that to travel on it, broke the heart of man and beast. " This description would apply to many of the village roads in Gujarat even to-day. During the monsoon communications from one village to another become a very difficult process for want of suitable roads. Efforts are being made to construct good roads, but the local authorities are too poor to spend money on building of them and unless they get grants from the provincial governments, they cannot do much in the matter. It is in every way desirable that systematic efforts should be made and a definite policy laid down for the development of roads in Gujarat. This question has attracted attention in almost all provinces. There is a good Road Board in existence in the Punjab and a road programme is under consideration there. This has been rendered possible by a road cess levied in that province to finance the programme. There is also a road board in Berar, and the question of appointing one for the Central Provinces is under consideration. Burma has had a road board for ten years and the provincial allotment for roads is placed at the disposal of the provincial board. An advisory road board has been constituted in Madras. The roads there are classified into these categories:

(a) Trunk roads.
(b) District roads.
(c) Rural roads.

The Madras Government undertake financial responsibility for the maintenance of trunk roads. In the case of district boards, half the cost is paid by Government subject to a maximum. Rural roads are completely maintained by the local authorities. In Bombay a strong board under the presi-

dentship of one of the ministers consisting of the official and non–official representatives of the District and of the motor and petroleum trades, has already been constituted. It is collecting statistics as to the nature of traffic, heavy and light, carried in lorries or motor cars and bullock carts and Tangas. Divisional Committees have been formed working under the Road Board. A resolution was brought before the Legislative Assembly to constitute a Central Board for the whole country including the Indian States. In 1927, a provision of five lacs was made in the budget for construction of roads, to be spent in consultation with the road board. This sum was exclusive of grants to local bodies and money spent on repairs and maintenance. The Bombay Government is spending 70 lacs annually on construction, repairs and maintenance of roads while over and above that 19 lacs were paid to the local bodies. 1)

In Bombay Presidency, the roads are divided into provincial roads and local roads. The local roads are to be maintained by the local authorities, while the provincial government looks after the provincial roads.

	In 1922 there were	
	Metalled Roads.	Ordinary Roads.
Ahmedabad	114	343
Kaira	185	
Panchmahal	139	30
Surat	189	238
Broach	70	186
	697	797

These figures show the paucity of roads in Gujarat. British Gujarat has an area of over 10,000 square miles, but it has still only 697 miles of metalled road and possibly a little over 800 miles of ordinary roads.

There is no doubt that good roads can give a great impetus to the agricultural industry of a country by considerably increasing the marketing facilities of the cultivators.

1) Budget speech 1927. Debates of the Bombay Legislative Council.

Development of motor transport would bring the villages into communication with the railway stations where there are no railways. There is a great future for motor transport in India. Already motor lorries are running in some parts of Gujarat, but without adequate road facilities, the scope of motor transport is bound to be limited.

" It must be remembered that India is very inadequately supplied with railway facilities and the introduction of motor transport service in many provinces has brought the rural classes into close touch with the cities. Motor lorries are also displacing bullock carts, where there are good roads. It is difficult to exaggerate the political and economic advantages of rapid means of transport in India. The development of motor transport services should in the opinion of this committee be encouraged." 1) I have quoted this passage from the report of Indian taxation inquiry committee to show the importance of more roads and encouragement of motor transport service in India.

The economic inquiry committee appointed by the Baroda Government also drew the attention of the Baroda Government to the problem of the supply of suitable roads in the State. There were only 752 miles of metalled roads in the State in 1926. These roads are largely to be found in Navsari district which has 410 miles. Besides there are 909 miles of kachha roads. The building of good roads in Baroda State is an expensive affair because of the nature of the country. " It is almost literally true that except in a few unimportant districts near the hills, not a stone can be found in the Gaekwad's dominions large enough to throw at a dog." The Baroda Government is trying to push the extension of railway in the State dominions. In 1921, there were in the State 209 miles of railway under foreign jurisdiction and 566 miles of railway owned by the State.

The transport difficulties and their effect upon marketing were noticeable chiefly in connection with milk and vegetables. The growing of vegetables is confined to villages

1) Para 419 of the report of the Indian Taxation Enquiry Committee.

within a narrow radius of eight to ten miles from the city. It would not pay the cultivators to grow vegetables because there is no market for them, if they were more than 20 miles away from a big city. In Surat district, I noticed that the only taluka in which vegetable and garden produce were extensively grown was Chorasi and most of the villages of Chorasi were within the radius of 10 miles from Surat. If, however, there were better transport facilities a greater area would have been devoted to the production of vegetable and garden produce. In many of the Bardoli villages, I asked the cultivators why they turned their milk into ghee when milk could always fetch a higher price, they promptly replied that there was no market for milk and the milk could not be taken to Surat though the distance between Surat and many of the Bardoli villages was less than 40 miles.

The establishment of cheap transport facilities and improved and rapid means of communication have, therefore, resulted in partially commercialising the Indian agricultural industry. The farmer now naturally considers the market prices of the commodities he intends to grow and the area under cultivation of various crops is determined more than in the past, by market considerations. Between 1918 and 1926 the price of cotton had considerably gone up. In 1915 it was 205 rupees per Bombay Candy, in 1918 it was Rs. 653 and 1922, Rs. 483 per candy. This high price of cotton resulted in a great increase of area under cotton cultivation in Gujarat compared to other commodities. In 1911 the area under cotton was 838,000 acres while in 1921, it went up to 940,000 acres. The better prices of vegetables and garden produce have brought about a very large increase of area under garden produce. In 1921, it was 160,380 acres, in 1911 only 20,000 acres were devoted to garden produce. The problem of marketing is, therefore, assuming a greater and greater importance every day in India. India and particularly Gujarat is essentially a country of peasant proprietors, and for these small farmers, the most vital question is to market their produce in such a way as to get the largest net return.

Goods are produced in order to be ultimately consumed. They could be consumed by the producers themselves on the spot and in that case the marketing problem would not arise. As it is, in many cases, the producer tries to sell what he has produced to some other persons, and with the money which he gets from the sale of his produce, buys what he requires. In the days, when transporting was expensive and transport facilities were not easily accessible, the producer sold the goods in the village market or to the buyers directly or to a village middleman, as is done even now in India. With the extension of the market, the problem of marketing naturally becomes more complicated. There are some commodities like wheat or cotton for which the whole world would be a market, while the scope of the market would be limited for fresh vegetables, fish or bulky articles. The area of the market, therefore, depends largely upon the nature of the produce. The producer cannot directly market his produce where the market is so extensive and the marketing services are, therefore, rendered by a distinct class of middlemen. As a rule there are the producers, the middlemen at the country points, the transporting services, the middlemen at city points, and the consumers. These middlemen render very useful services. The produce of the farmers must be assembled, transported and distributed. Economic considerations require that these and other marketing services should be performed by specialists, who have become known universally as middlemen. The services which they render consist of

(1) Assembling,
(2) Grading,
(3) Packing,
(4) Transporting,
(5) Storing,
(6) Distributing,
(7) Financing,
(8) Processing.

These marketing services are really a necessary part of production. Thus marketing as related to farmers may be

defined as the rendering of those essential services which enable the consumer to utilise the products of the farm. These services may be rendered by

(1) a private marketing agency,
(2) a co-operative marketing agency,
(3) a Government marketing agency.

In Gujarat and in other parts of India, there is no organized marketing. Marketing is done in many cases secretly. The producers have no idea of the right prices and are not sure whether the middlemen are paying the correct prices. In many cases the cultivator has borrowed money from the village Bania or grain dealer, and he is obliged to sell his produce to him at a price much below that to which he is really entitled. In case of Kapas (cotton) it is very usual for the Bania to buy the standing crop, the estimated outturn from the field being valued at from Rs. 30 to Rs. 100, per khandy below the prevailing rates. In case of almost every product there are considerable number of compulsory deductions in the market for religious and charitable purposes, for samples and the like. In many cases, the unit of weight for buying from the cultivators, is larger, than the unit of weight for selling by the dealer. Thus in the "Gur" market in Poona the cultivator seller has to supply 256 lbs, per Palla, on the other hand, the unit for the purchaser of gur is 240 lbs. per Palla. In most products, there are two middlemen, the Aratya who represents the seller and the Dalal, who represents the buyer. Bargains are usually made secretly by manipulation under cloth and without the knowledge of the cultivator seller. This is always brought up as a grievance by the people but open marketing is often resisted by the Dalals. In case of kapas, about which we have more knowledge than any other article, the cultivators sometimes sell their crops directly to the Dalals or agents of the buyers or dealers in cotton. They sell their produce in small lots and it is not properly graded and as a rule they get a much lower price than what they would have got, if they could have marketed

it in an open market. The Indian cotton committee while discussing the problem of the marketing of cotton, remarks " The small lots which the Bania purchases, he mixes indiscriminately and sells to up country dealers, who dispose of them in turn either to bigger dealers, to the large exporting firms, or to ginners who deal in cotton. The latter get the kapas ginned and pressed and either sell it to mills up country or send it to Bombay or other parts for consumption there or export. It is obvious that the cultivator is heavily handicapped in securing an adequate price for the produce by the number of hands through which it passes. He would be more likely to obtain this, if the number of middlemen could be reduced and if he could be brought more directly into touch with larger buyers. " The committee recommended the establishment of open markets like those which exist in Central Provinces and in Berar. In accordance with the recommendation of the cotton committee last year, a bill was brought before the legislative council. The bill is purely an enabling measure, based on the recommendations of the Indian Cotton Committee and the Berar cotton and grain markets Law of 1897. Cotton markets, recognised by custom, already exist in parts of the Bombay presidency but no legal sanction exists for the regulation of such markets, other than the market in the city of Bombay. The bill, before the Council, is meant for the whole of Bombay Presidency, except Bombay City and Aden. The Government by clause 4 of the bill can notify any place as a cotton market and define the limits of such a market. Local opinion must be consulted before such cotton market is established. On the establishment of a market, a market committee is to be constituted, including representatives of the cotton growers, of the cotton trade and of the local authority within whose jurisdiction the market is situated. The market committee is empowered to make bye-laws to regulate business and the conditions of trading. Under clause 16 no private market for the purchase and sale of cotton may be opened in or near places declared to be cotton markets. Provision has also been made for disallow-

* The bill has become an Act but does not apply to Gujarat.

ing trade allowances, other than prescribed trade allowance, and for penalising violation of the substantive provisions of the Act and of the Rules.

There is no doubt that the cultivator in Gujarat to-day does not get the just market price for his produce. No systematic study has been made in India nor are any facts easily available to find out the middleman's margin in Gujarat, but as the cultivators sell their produce in small lots, without proper grading and in unorganised markets, without any knowledge of the current market rates, it is obviously impossible for them to get adequately reasonable prices. The only solution is the organisation of better marketing facilities making it possible for the farmers to sell their produce on a co-operative basis.

If the products of several farmers were assembled at a central place, there would be considerable saving in freight charges and operating expenses. Grading and standardization would bring the farmers better prices. Grading is a process whereby products are sorted into groups of uniform kind and quality. Standardization establishes the permanency of these grades, that is, it means that a given grade shall contain the same quality of article, each day, week, month or year. Standardization makes it possible for people to learn what a given grade is, and enables them to gain confidence, but in selecting a particular grade of article the same quality may be obtained in subsequent purchases. To consumers, this service facilitates selecting and purchasing and it makes possible other savings, in consequence of which demand is increased. For the marketing agency, it lessens the volume of waste product to be handed and thereby reduces marketing costs. Finally the farmer benefits because increased demand gives him a larger market, which combined with the lower costs of marketing, rewards him with better prices or larger sales. Grading is economical to the consumer. A consumer, in many cases, is a producer, in some line or work. In buying ungraded products, the consumer is obliged, not only to accept inferior commodities but he himself must perform the grading service. Grading renders sale by description possi-

ble and considerably reduces marketing expenses. In North Carolina the fact that buyers place a premium upon the higher grades of cotton, enables those who have their produce classed or graded before sale, to obtain substantially higher prices. In the coastal plain section classed cotton brought $1·50 per bale more than unclassed cotton. In the absence of a grading system producers of high quality do not obtain the real value of their goods for the reason that neither they nor the buyers know the value. "Some of the most striking examples of how farmers have captured new markets and stimulated old ones, are shown in the experience of both New Zealand and Danish producers of butter and the Danish producers of bacon. The various large federated fruits and nut growers' organization of California have more recently demonstrated the virtues of following the policy of producing quality goods and efficiently grading them." [1]

A well organized marketing system whether it is co-operative or consists of middlemen can render great help by storing. The cultivators in India are compelled to sell their produce at the beginning of the harvest. Under a well organized marketing system with proper storing facilities, they can hold on and thus get a fairly uniform price for their produce throughout the year. There is no method of marketing so suitable for the peasant proprietors as co-operative marketing. The co-operative marketing system renders all the important marketing services and thus saves for the farmers the marketing expenses for which the cultivators would have been compelled to pay the intermediaries or middlemen. By creating in a community the conditions which promote or ensure a supply of high grade products both uniform in quality and adequate in quantity, a community reputation is frequently built up which induces buyers to come directly to farmers, who according to the usual methods at present are obliged to go to the buyers. In this way, co-operation saves to the farmers considerable marketing costs. This means higher profits for farm products.

1 Macklin's Marketing of Farm Products.

There would be advantages in buying and selling. Co-operative marketing is an effort in the lines of organised co-operation amongst farmers. It naturally, therefore, leads to organized rural communal life. As a rule at the outset, the co-operative marketing societies would meet with a good deal of opposition on the part of private trading concerns. In Dharwar, the Gadag Co-operative Cotton Sale Society was completely boycotted by the Cotton brokers, and they nearly succeeded in killing that society. The essential requisites of successful co-operative marketing societies are:

(1) There should be sufficient business.
(2) There must be loyalty amongst the members and confidence in co-operation.
(3) There must be able leadership.

To ensure an adequate volume of business, the execution of contracts between farmers and their local associations has become the approved plan.

The character of the business must be readily understood by its patrons. Local units are essential, before they are federated. There should be no speculation. The profits of the business must be distributed in proportion to contributions of products or patronage and not on the basis of capital. Interest on share capital, in case of such societies, must be fixed. The success, however, of the enterprise depends upon efficient management. Attempted economy by getting a cheap manager is undesirable. A competent, good business man must be selected and a reasonably good salary must be offered to him. The advantages of the co-operative marketing have been clearly summed up by the Editor of the "Progressive Farmer" an American periodical as follows:—

" Under the present marketing system the farmers

(1) ignorantly,
(2) individually,
(3) helplessly,
(4) dump farm products,

(5) in small quantities,
(6) without proper grading,
(7) without scientific finance,
(8) selling through untrained producers.

Under the co-operative marketing, they

(1) intelligently,
(2) collectively,
(3) powerfully,
(4) merchandise farm products,
(5) in large quantities,
(6) with proper grading,
(7) with modern systematic financing,
(8) selling through the most expert selling agencies."

CHAPTER XII.

Economic Conditions.

It is difficult to get a proper idea of the economic conditions of the rural population of Gujarat. The rural population itself is very complex consisting on the one hand of fairly prosperous Pattidar and Anavils, and on the other hand of poverty stricken Dublas, Bhils and even some Dharalas. From the productivity of the soil it would not be difficult to infer that in the case of Jirayat land, a family must have at least 20 acres of land to remain in a reasonable state of comfort. A very small part of the rural population possesses and cultivates land of or above 20 acres. I have detailed information about the economic conditions of one village in Baroda State. The information was collected by the local officials of the village and the Director of Commerce, Baroda State, was kind enough to hand over to me all the papers in connection with that enquiry. It was a small village called Bhadkad with 356 families and a population of 1,264 persons. The total income of that village was 29,000 rupees from crops, Rs. 6,000 from milk and ghee, Rs. 8,400 from industry trade and labour. This estimate appears reasonable as the total amount of land cultivated in Bhadkad is about 3,200 bighas or 1,940 acres. The yield per acre in the village is estimated at 25 rupees. The local officials, however, had collected information from each family in the village. There were 341 buffaloes and 42 cows, and the income from milk and ghee amounted to 6,000 rupees. 221 families sent a return of their income. I classified the income into three divisions. Families with an income of 500 rupees, or above, who would be in a state of comfort, were put into the first division; those whose income

was above 300 rupees and below 500, and who were just able to make both ends meet, were put into the second division, while all those who had an income of less than 300 rupees were put into the third division. There were 14 families in the first division; 66 in the second; and 141 in the third division.

I have looked upon 300 rupees a year as a minimum income necessary for a family to live in comfort according to the accepted standard of living in the village. A family consisting of one man, a woman and two children would require:

Grain.

1 man	2 lbs.	daily, or 54 mds. every year.
1 woman	2 lbs.	
2 children	2 lbs.	
	6 lbs.	135 Rupees.
Ghee 1/8 ser a day		36 „
Gur and Sugar worth Rs. 20 a year		20 „
Condiments, a year		15 „
Fuel and light		10 „
Clothes and Shoes		47 „
Festivities and Ceremonial expenditure		15 „
House repairs and utensils		10 „
		288
Miscellaneous		12
		300 Rupees.

The food of the prosperous Pattidar or Anavil castes consists of wheat, rice, dal and vegetable, and occasionally milk. The average cultivator and the labourer in the South Gujarat generally eats Juwar and rice, while in the North Kodra or Bavto ; milk is rarely taken by this class. The rural classes have to spend nothing on house rents.

I have selected three typical budgets from the village of Bhadkad, one of the Pattidar family with an income of 1,670 rupees; another of a Dharela cultivator cultivating 16 bighas of land, and having an income of 561 rupees; and a Dhed who cultivated $2\frac{1}{4}$ bighas of land, and supplemented his income from land by working as a labourer. His total income was 281 rupees.

Pattidar's Budget.

The family consists of three persons, one man, one woman and a daughter.

I. Grains Bajri, Dal, Rice and wheat.	$5\frac{1}{4}$ Seers a day.	Rs. 140
Vegetables.	0–1–0 a day	22–8
Condiments.	0–1–0	22–8
Milk.	0–1–0	22–8
Ghee.	0–3–0	67–8
Tea.		7–8
Sugar and Gur.		25
		307–8
Clothes and Shoes.		100
Light and Fuel.		24
House Repairs.		40
Expenses on ceremonies.		150
Education.		5
Miscellaneous.		25
Expenses of keeping a horse and interest		300
		951–9

Budget of a Dharela's Family.

II. *Income–* 561 rupees.

from land	Rs. 318
from milk and ghee	Rs. 195

from industry Rs. 48

Family consists of man, woman a grown up son and his wife two young children.

Expenditure.

(a) Kodra	5	seers	per day	Rs. 67-8	a year.
(b) Bavto	3	„	„	61	„
(c) Dal	1	„	„	27	„
(d) Rice	2	„	„	60	„
(e) Vegetables				5	„
(f) Condiments				15	„
Ghee				36	„
				271-8	
Clothes				80	„
Light and Fuel				12	„
Repair of House				8	„
Expenditure on ceremonial				15	„
Miscellaneous				15	„
				401	

III. A family consisting of a man (50) a wife (45) three sons (15, 8, 2) and a daughter (13)
Having a Khata of $2\frac{1}{4}$ bighas.

Income— 81 rupees from land,
200 rupees from labour.

281 rupees.

Expenditure-

Kodra	3	seers	a day	Rs. 39
Bavto	3	„	„	54
Dal	1	„	„	22-8
Rice	1	„	„	18

Condiments	10
Vegetables	8
Milk and Ghee	18
Sugar	18
Miscellaneous	10
	197-8
Clothes and shoes	60
Light and Fuel	7
House repairs	2
Ceremonies	10
Tobacco	3
	279-8

In Cassino the income of a family of metayers who cultivated about 20 acres of land was 12,000 lire. The family consisted of six persons and they consumed

	Lire a year.
8 kilogramme of wheat a day 14 lire a day	=5040
2 „ potatoes „ ½ „ hericots „	300
10 Liters of oil a month	960
100 „ wine „	900
Dress	2500
Miscellaneous	1000
	10700

The agricultural labourer in Lombardy generally makes about 4000 to 5000 Lire a year. The total income of the family, if there are three working members, comes to 12000 to 15000 Lire. Their standard of living is the same as that of small tenant-farmers. In Northern Italy, however, meat is consumed more than in South or Central Italy.

CHAPTER XIII.

Suggestions for Reconstruction.

We have examined the economic structure of rural Gujarat and have seen some of its defects. Even the most confirmed optimist would acknowledge that there is room for considerable improvement, and it is my intention to suggest here some measures of reconstruction.

The first and foremost problem in Gujarat is the extension of irrigation facilities. In Italy the State, as we have seen above, has recently been making attempts to encourage irrigation, chiefly in Southern Italy. The State undertakes to advance to any consortium or individual from 40% to 45% of the expenditure necessary to construct irrigation works. In Gujarat, the State has been helping individuals by making Tagavi loans but the cultivators have not taken full advantage of such loans. Consortiums or co-operative societies should be formed in Gujarat for the construction of the more expensive irrigation works, which the individual cannot afford to undertake, and the State may advance a part of the expenditure for such works. In a country with such precarious rainfall as Gujarat irrigation is a prime necessity. Irrigational facilities would enable the cultivators to grow the more expensive garden crops, fruits and vegetables where there are marketting possibilities. In the villages of Chorasi Taluka where garden crops, like yam, ginger and turmeric are grown, a holding of $2\frac{1}{2}$ acres is enough to maintain a family and yield an income of Rs. 1000 a year. In Italy, round about Naples, and near the coast, small-holdings of 2 or 3 hectares devoted to the cultivation of citrus fruits yield an

income of 20,000 to 30,000 Lire, owing to the existence of irrigation facility, while in the interior of Southern Italy and Sicily owing to the absence of such facilities, extensive culture alone pays. Big estates known as Latifundia have come into being owing to geographical factors. Thirty years ago the condition of Italian peasants working on these Latifundia was extremely bad, and it led to wholesale emigration to America. The Italian State is now doing its level best to break up the Latifundia into convenient units of cultivation where possible, and introducing irrigation facilities which alone can render the division of Latifundia into small units of cultivation where intensive cultivation can be carried on possible.

The question next in importance is the problem of stopping excessive subdivision of peasant's holdings and, as far as possible, preventing fragmentation of their property bringing about consolidation where fragmentation has already taken place. In Italy very little has yet been done to bring about consolidation or prevent excessive subdivision of holdings. It is recognised that from an ideal point of view, it would be better to prevent excessive subdivision, but the Government realise its limitations. In Italy greater stress is laid upon measures which would increase the productivity of land rather than upon those which would bring about a better distribution of landed property. The Italian Government realises that the most important problem is that of intensifying agriculture and bringing about increased production.1 We in Gujarat should first concentrate all our efforts on increasing the productivity of the soil. To create economic holdings is a worthy ideal, but any hasty legislation to achieve this would cause more harm than good. The right solution of the problem of excessive subdivision of holdings is the limitation of population, as in France, and the creation of subsidiary employment which, coupled with the income from small holdings, is capable of maintaining the families of peasants on the land in tolerable comfort.

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1) International Institute of Agriculture Rome. Review of Agricultural Economics 1925 (Jan-March)

Fragmentation of holdings should be prevented and consolidation brought about where possible. Co-operative efforts in Punjab in that direction have been successful, while beginnings have been made in Baroda. Compulsory legislation did not succeed in Baroda, nor has it succeeded in France. It would be advisable, therefore, to adopt co-operation in bringing about consolidation rather than imitate the legislation enacted in countries like Switzerland, Japan and Germany.

The tendency in Gujarat to substitute money rents for crop-sharing is in many respects harmful. In Italy there was the same tendency immediately after the war; prices had gone up and the tenants preferred to pay cash rent to crop-sharing. The rise in prices was not maintained, however, and in Italy now the crop-sharing system is again displacing the cash-rent tenancy. In Gujarat, as in Italy, where the cultivating tenants are poor and have very little capital of their own and where the predominant agriculture is of the self-sufficing type, crop-sharing is preferable to cash-rent. Perhaps in the case of tobacco, cotton, vegetable and garden produce money rent may be suitable, but where cereal cultivation predominates crop-sharing is more advantageous to the tenants.

In Italy crop-sharing is organised more systematically than in Gujarat, and, as we have seen above, the landlord is not merely a rent receiver, but contributes capital and shares working expenses, and also supervises and directs. In Gujarat the landlords are in many cases absentees, and they are satisfied as long as they receive half of their share. This system is not beneficial to the community. The tenants usually find that this kind of lease does not pay them : they try to be dishonest and this leads to petty squabbles between landlord and tenant.

Then again, in Gujarat there is an urgent need of creating a machinery which could acquaint the cultivators with the technical researches made by the agricultural experts and departments. Successful experiments in methods of

improved agriculture made by agricultural experts must be made more familiar to the cultivators. This could be done only by the creation of a Farmers' Syndicate or Association, or Taluka development association, which could employ at least one agricultural overseer to help the cultivators in each taluka. Efforts are being made in this direction. When I visited Borsad Taluka I was told that the Taluka Development Association there employed an agricultural overseer to help the local cultivators and induce them to adopt successful experiments made by the Agricultural Department in tillage or selection of seeds on their farms.

In Italy prize competitions for the highest yield of wheat per acre are held with a view to encouraging improved methods of production. Cinema films are used for propaganda purposes. Intensive campaigns are organised, in particular, to increase the average yield per acre. A Permanent Central Wheat Committee has been set up in Rome, as well as Provincial Councils in each province, with a view to spreading improved methods of agriculture. The pivot of this organised propaganda is the travelling lectureship established throughout Italy. All the bodies connected with agriculture, like Syndicates of Farmers, technical experts and agricultural labourers, have been utilised for the improvement of Italian agriculture.

As far as the provision of agricultural credit is concerned, the Fascist Government has been trying to utilise the money made immediately after the war owing to the high price of agricultural produce for financing agricultural industry. A Central Agricultural Bank has been established which will make long-term advances for all schemes of land improvement or " Bonifica integrale ". Landlords in many cases are compelled to carry out schemes of land improvement, and are liable to expropriation if they fail to do so.

In Gujarat the Co-operative Credit Societies are doing their best to provide short-term credit. The rural credit societies in Gujarat are better off than in Italy, but no provision has yet been made for long-term credit. Only this year

an experiment is being made in Broach district for the provision of long-term credit.

As far as the co-operative movement is concerned, there is need for societies for supplying good seeds and agricultural requisites. The agricultural consortiums in Italy have done very good work in supplying good seeds, manures and implements to the cultivators. In Gujarat similar bodies should be organised for each Taluka.

Another aspect of the co-operative movement in Italy which requires careful study is the association of members for co-operative landholding and co-operative farming. There are two types of such societies in Italy (a) Affitanze Collettive a conduzione unita (Collective leases with joint management and (b) Affitanze collettive a conduzione divisa (collective lease with divided management). In collective lease of the first category the enterprise is placed under one sole management and the work carried out by the members jointly in accordance with rules laid down by the governing body. In their capacity of workers, the members receive wages; but if there are any profits, they are distributed in proportion to the amount of capital subscribed by each member.

In collective leases of the second category, the enterprise is already divided, or rather there exist a large number of self-governing undertakings, each of which is entrusted to one of the members.

Societies of the first type have certain advantages. Where the cultivators cannot afford expensive machinery or where the individual holdings of the cultivators are too small for the use of expensive machinery, joint farming makes it possible for expensive machinery to be profitably utilised as the farm exploited by the members would be of a suitable size for the use of such machinery. In Gujarat, where the cultivators have very little capital and the units of cultivation are very small, such societies for joint farming would be very useful. As far as the marketing of agricultural produce is concerned, co-operative societies for the sale of cotton, to-

bacco, fruits and vegetables would be of great advantage to the cultivators. Such societies have been doing good work for the sale of cotton in Gujarat. I visited some of these cotton-selling societies and was given to understand that by selling cotton through these societies members got at least Rs. 5 to 10 more per Bhar than non-members. (Bhar=400 lbs.)

As regards vegetables in Gujarat, the Kacchias entirely control the business of marketing. They appropriate large profits for rendering middlemen's services. Co-operative societies for the sale of vegetables would, therefore be a boon for the Gujarat cultivators also. In Naples, for example, where citrus cultivation is very common, the cultivators have organised themselves into co-operative societies for the sale of fruits. These societies have become very successful.

Another important problem which requires careful attention in Gujarat is the steady supply of agricultural labour. The present system of " hali labour " is breaking down and the cultivator finds it difficult to obtain their seasonal labour supply. Something must be done in Gujarat to ensure a steady supply of labour in agricultural districts, and this can only be achieved if the condition of agricultural labour in Gujarat is improved. The labourers must be provided with housing facilities and they should be given a certain share in the produce of the land. This will be sufficient inducement to keep them on the land.

The most essential thing in all schemes of rural reconstruction in Gujarat is the spread of primary education. The great obstacle to all efforts aiming at the amelioration of the lot of the masses in India whether rural or urban is their appalling illiteracy. In Bombay presidency in 1911, there were only 120 males in 1000 who were literate, while only 14 females out of 1000 could boast of being able to read and write. In 1921, the number of literates had slightly increased from 120 to 138 in the case of males and from 14 to 23 per thousand in the case of females. The passing of the Compulsory Education Act in 1923, by which local governments in any part of the presidency can put compulsory education into execution, will, it is hoped, aid in the spread of education.

The Baroda State has had compulsory education in force for over twenty years; and although the result has not been very promising, it is certainly better than the state of things in the Bombay Presidency. In Baroda there were in 1901, 163 males and 8 females per thousand who were literate. In 1911, there were 175 males and 21 females, and in 1921, 210 males and 40 females per thousand who were literate. British Gujarat however does not compare in favourably with Baroda as the following figures show:—

Number of Literates per thousand.

	Males.	*Females*
1901	206	16
1911	201	26
1921	223	42

The Baroda State, shows more rapid progress than British Gujarat, and this is certainly due to the existence of the Compulsory Education Act.

A sound system of education is absolutely necessary for a country's progress, and it is no exaggeration to say that Denmark's agricultural progress during the last century was very largely due to its excellent people's schools. The progress which Italy has made during the last fifty years in the spread of literacy is remarkable. I am quoting figures to show this [1] :—

	Number of literates.			Percentage of literates.		
	Males.	Females.	Total.	Males.	Females.	Total.
1872	4,422,347	2,781,781	7,214,238	38	24	31
1882	5,533,136	3,736,112	9,269,248	45	31	38
1901	7,841,847	6,342,366	14,184,213	58	46	52
1911	9,662,734	8,660,184	18,322,918	67	58	62
1921	12,713,980	12,108,130	24,822,020	76	70	73

1 Annuario Statistico Italiano 1929.

Peasants' schools have been opened throughout Italy, and every effort is being made to spread education amongst the masses. Since the passing of the Compulsory Education Act in Bombay Presidency there has been some progress in the spread of education.

In Gujarat the number of boys and girls going to primary schools has been steadily increasing as will be seen from the following table.

	Number of Primary schools.	Number of pupils.	
		Boys.	Girls.
1920–21	2176	125,214	42,126
1921–22	2180	115,249	37,973
1922–23	2171	120,973	39,065
1923–24	2195	126,212	40,725
1924–25	2234	135,366	43,880
1925–26	2272	143,975	47,162

According to the census report of 1921, there were approximately 444,000 persons between the ages of 5 and 10. The primary schools have to educate all these persons, but in 1926 they educated 45 % of persons between the ages of 5 and 10. In Gujarat the percentage of girls going to primary schools to the total female population is about 3.3, while the percentage of school going boys to the total male population is 10.

In Gujarat the advance of education has to fight against several obstacles. There is a considerable wastage of education. If one examines the figures of primary education in Gujarat, one will find that of the total number of pupils attending primary schools, more than

2. Reports of the department of Public Instruction.

90% attend the first two lower classes. Hardly 10% finish the stage of lower primary education and go up to the upper stage. Those who have only gone through the lower stage of primary education easily lapse into illiteracy if they are out of touch with reading and writing. In rural areas there is every reason to believe that there is a considerable lapse into illiteracy of people who had the rudiments of education in their youth. Many of the village primary schools are one-teacher schools. The class of teachers in these village primary schools is not particularly inspiring, and the village parents do not attach a very high value to the education received at these schools. Many of the pupils are withdrawn after visiting the schools for a year or two, and made to work on their parents' fields. The question of finance is by far the most important one. In spite of the fact that the Bombay Government spends more than any other provincial Government in India, educational facilities cannot be increased without substantial contributions from the people through local taxation.

	Total Provincial expenditure on education.	Expenditure on primary education.
Bombay	1,69,88,259	98,22,578
Madras	1,58,26,427	55,28,274
Bengal	1,35,45,045	19,45,105
U. P.	1,56,14,823	43,07,387
Punjab	86,77,912	19,16,563

There are, however, many hopeful signs. I visited a small village near Udwada this winter, which had a night school for adults. Both men and women came to this school and they were very enthusiastic. The Bombay Government has lately been trying to open agricultural bias classes in the presidency. In 1926, there were 43 such schools in

Gujarat. These schools are not by any means vocational, but they are designed to create amongst boys love and attachment for rural life and agriculture. I visited one such school in Pardi taluka. The boys attending these agricultural bias schools do not seem to be quite satisfied, and they prefer a more literary type of education, which they think would enable them to get employment in the towns. They look upon agricultural employment as a kind of last resort when they cannot get anything better to do.

In England I visited one of the agricultural bias schools in Herefordshire. I was struck by the difference between the agricultural bias school which I saw in the village of Wagh Chippa in Pardi taluka and the English school. The boys and girls in the Herefordshire school were quite happy and interested in their work, while the boys in the Pardi school gave one the impression that they were compelled to attend the agricultural bias school. The difference was largely due to the personality of the teacher. The bias schools will only be a success if the right kind of teacher can be found.

Besides these primary agricultural bias schools, there are agricultural high schools of the "loni" type in Godhra and Surat, and there is the Agricultural College at Poona. There is a strong current of opinion that Gujarat should also have an agricultural college of its own.

Rural reconstruction involves the consolidation of holdings, the communal or co-operative holding of implements, which are beyond the power of individual peasant proprietors, and the development of secondary occupations. It involves further the organisation of purchase of supplies and of the sale of produce. It means the partial elimination of ill-health and malaria in the villages. It is a problem which demands the immediate attention of the leaders of the country. In Gujarat, as in Ireland towards the close of the 19th century, excessive importance has been attached to the political question, and it would be much better if a part of the energy now devoted to politics, by the leaders in Gujarat were transferred

to economic questions. Fortunately for Ireland, there was Horace Plunkett who saw that the economic amelioration of Ireland was the more important problem, but no such leader has yet appeared in Gujarat. What Gujarat needs today is an organised effort to solve the problem of rural poverty. Without organisation it is impossible to achieve success in any field. There are very important questions to be tackled. With an increase in the population, the problem of poverty is likely to become more acute unless efforts are made to increase the productivity of land. Holdings are becoming smaller and smaller, and the ryots are everywhere in debt. Money is extravagantly spent on marriages while land is being starved for the want of manure, good seeds and working cattle. What the country wants today is leadership and organisation to infuse new life amongst the peasants and to direct their activities into the right channels. In conclusion, I have only to make an appeal to my countrymen to take up this important mission upon which the happiness and welfare of their country depends.

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