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**Baroda Economic
Development Committee
1918-19**

REPORT

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REPORT OF THE COMMITTEE
ON THE
ECONOMIC DEVELOPMENT
OF THE
BARODA STATE.

INTRODUCTION.

1. Under instructions from His Highness the Maharaja Saheb, the following order No. 14 $\frac{28}{4}$ (B), dated 23rd January 1918, was issued by the Dewan appointing the present Committee and defining the scope of its work.

Appointment of the Committee.

The Committee should submit practical suggestions before the month of June.

“The material prosperity of a country depends mainly on its agriculture, development of arts, commerce and industry, forest products, and the mineral resources. The well-being of the Baroda State rests chiefly on agriculture. When extensive cultivation is not possible intensive form must take its place. This can be done by improved methods of agriculture. How the country can be made prosperous and how material resources should be developed are the problems which require our constant attention. The Government officials should submit practical suggestions after an inquiry into the methods to be employed to increase the productivity of the soil, to improve cattle-breeding, to develop the forest products, arts, commerce and industry. His Highness the Maharaja Saheb has been pleased to appoint a Committee with a view to enable officers and ryots to put forward their suggestions based on experience which would receive proper attention of Government. The members of the Committee are:—

1. Shrimant M. R. R. Sampatrao Gaekwad, President.
2. R. C. Whitnack, Esq.
3. Rao Bahadur Govindbhai Hathibhai Desai.
4. Sheth Maganlal Hargovinddas Kantawala.
5. Manilal Balabhai Nanavati, member and secretary to the Committee.

The Committee should submit to the Government the suggestions of the officials and ryots with proper classification and useful information with its recommendations before the month of June 1918.

The people and the officials are hereby informed that they should send their suggestions regarding the development of the economic resources of the State to the Director of Commerce before the end of March 1918."

Suggestions are invited before the end of March.

2. Subsequently, another order was passed (No. 1522 (B), dated 6th February 1918) inviting suggestions from the public on general working of the State and on such other topics that may be useful to the administration. The Committee considered the scope of the second order as being very wide and interpreted it to mean that only suggestions on the administration of those Departments that were immediately concerned with the economic development of the State were invited. The interpretation of the Committee was confirmed and the Committee made inquiries accordingly.

Subsequent order.

Appointment of an additional member.

3. Subsequently, Mr. Harilal G. Parikh, B.A., LL.B., was appointed an additional non-official member of the Committee and he joined at the last sessions at Baroda.

4. Soon after the publication of the above orders, a questionnaire (Appendix I) was prepared and published in the "Adnya Patrika" and sent to all the leading merchants, agriculturists and other citizens as well as the officials of the State. After the receipt of replies, the sessions of the Committee were held at all the Head-quarters of the Districts, viz., at Mehsana (2 days), Amreli (2), Naosari (2), Baroda (4) and Kodinar (1). Altogether 133 persons had sent written replies, of whom 75 were examined and 7 more were invited to give oral evidence even though they had not given written statements. The Heads of Departments immediately concerned with the economic development of the State were specially requested by the Committee to prepare reports giving a historical sketch of the working of their Departments and the present problems they are working at, with suggestions for future development.

Procedure adopted.

General Classification of the suggestions.

5. During the course of the inquiry the Committee received hundreds of suggestions of all kinds. It is almost impossible to deal with all these in this report. We have discussed here general questions—questions of principle and of State policy and left specific suggestions to be worked out by the Departments concerned, with our opinion thereon. These suggestions are grouped under three heads:—

- (1) those to which the Committee considers effect should be given;

- (2) those regarding which the Departments concerned should make further inquiries and report to Government their opinion; and
- (3) those which are unimportant and need not be considered at all.

A list of all these is given in Appendix II.

6. The scope of this inquiry being very wide, in order to fully appreciate the discussion that follows we have considered it advisable to give some important facts concerning the general economic condition of the State and a review of the various measures adopted to improve it. We, therefore, propose to divide the report into two sections:—

Main Sections of the Report.

- I. A statement of the general economic condition of the State including a statement of its resources;
- II. (a) various steps taken by the State during the last 30 years for its economic development;
- (b) suggestions for further development as come within the scope of this inquiry

7. In the preparation of the report, we have fully drawn upon the various Government publications and special reports published by the various Departments for this inquiry, for which no special acknowledgments have been made in the body of the report. However, a list of the important Government publications from which the materials for this report have been drawn is given in Appendix III.

Sources of Information.

Acknowledgments of Services.

8. It is highly gratifying to acknowledge the cordial help rendered to us by officials and non-officials throughout the course of our inquiry. In particular, we record our deep sense of sorrow for the untimely death of Mr. R. C. Whitnack, one of our colleagues, who was ever ready to help us with his varied experience and expert advice, and the Committee feels his absence at every point in presenting the final report.

We also take this opportunity to place on record our appreciation of the services of our Secretary, Mr. Manilal B. Nanavati, for rendering valuable assistance in working out the detailed lines on which we conducted our work.

PART I.
General Economic Condition
of the People
OF THE
BARODA STATE.

PART I.

(A). General Information regarding the Economic Development of the People.

9. The larger part of the territories of the Baroda State is situated in Gujarat, and the rest in Kathiawad. All the four administrative divisions of the State—Baroda, Kadi, Naosari and Amreli—lie between 20.45' and 24.9' N. and 70.42' and 73.59' E., with the exception of the Okhamandal tract which lies between 20.5' and 20.35' N., and 69.5' and 69.20' E. The Gujarat divisions of the Baroda State are separated from each other by interlaced parts of British territory belonging to the Districts of Surat, Broach, Kaira and Ahmedabad, and the Political Agencies of Panch Mahal, Rewakantha and Mahikantha. Similarly the six Talukas of the Amreli Division are interspersed with the various Native States of the Kathiawar Peninsula. The total area of the State is 8,182 square miles, Kadi Prant having 3,023, Baroda 1,898, Naosari 1,914 and Amreli 1,347 square miles. Out of this area, 636 square miles mostly in the Naosari District and a few in the Amreli District are covered with reserved forests.

10. The greater part of the State lies within the area of the coastal band of the alluvium which has been formed of the detrital deposits brought down from the Western slopes of Malva and the Southern parts of Rajputana by many rivers, large and small, which drain the province of Gujarat. The upward slope of the alluvial band from the sea-board eastward is very gradual so that except where wind-blown accumulations of loam or sand make small eminences here and there, the face of the country appears to be a dead flat. It is only as the eastern side of the alluvial flat is approached that low hills make their appearance.

11. The soils are mainly alluvial, except in the hilly parts of the Naosari and Amreli Districts and in the South-east corner of the Baroda District where they are mostly formed by the disintegration of the underlying rocks. These alluvial soils may roughly be divided into *Gorat* or light-red (and sandy loam), *Besar* or mixed loam and *Kali* or black. The rock-formed soils are for the most part black; but where they have come into contact with the alluvial soils, they have formed a variety of *Besar*. The distribution of these soils may very briefly be stated as follows:—

The soils of the Naosari and the Baroda Districts may principally be classed as *Gorat* or light-coloured, *Kali* or black and

Besar, which is intermediate between the other two kinds. As a rule, the black soil of the Naosari District is far superior to the soil of a similar kind found in the other Districts. The lands formed in the beds of rivers from alluvial deposits are often found in the Naosari District and are most productive. In the Kadi District, the soil is mostly of the light sandy kind. Black soil is met with, but merely in patches in parts of the District except in Kadi and Kalol Talukas where in the Southern parts it is wholly black. The soils of the Amreli District (Okhamandal excepted) may be classed under two main heads—black and *Gorat*. But the black and *Gorat* soil of this District is much inferior to the similar soils of the Baroda and Naosari Districts on account of the shallow depths, scanty rainfall and dry climate. In Okhamandal, the Northern half is slightly red but the whole of the coast line is sandy and unproductive. Inland, the soil is fairly productive and fertile.

12. The average annual rain-fall ranges from about 40 to 70 inches in different parts of the Naosari District, from 30 to 50 inches in the Baroda District, from 15 to 35 in the Kadi District and from 13 to 30 in the Amreli District. Thus the fall is the heaviest in the southernmost District, and it goes on diminishing as the monsoon current travels from the South towards the North. It is considerably heavier in Gujarat proper than in Kathiawar. The duration of rainfall is about $4\frac{1}{2}$ months in the Naosari District, commencing early in June and ending by the middle of October. It is four months in other divisions, commencing a little later, that is about the end of June. The character of the *Kharif* crops and the good prospects of the *Rabi* depends entirely upon the regularity and seasonableness of rainfall from the middle of June or the beginning of July to the middle of October. The late showers of October help the spring crops also. Sufficient and timely rain in June, July and August in the Naosari District and in July and August in other Districts gives hope of a good harvest; but the full and satisfactory maturity of the crops depends upon the September and October showers.

13. These periodic rains are the chief controlling factors in the life and means of subsistence of the people of the State. Failure of the monsoon current, its premature cessation or its unequal distribution means a total or partial bankruptcy of a great majority of the people. Great loss of property also results, sometimes leading to death of men and cattle, as happened in 1899—1900.

Unfortunately, a part of the State territories is situated in a position where there is likelihood of some failure of rain at short intervals. The table given in Appendix IV gives the amount of rainfall in all the Districts during the last 27 years.

14. The climate of the Baroda State varies considerably in different Districts. But it may be said generally that it is dry and hot in the hot

season, which commences in March and ends in June. The climate during the rainy season—July to October—is hot, moist and relaxing. During the cold season which commences in November and ends in February, the climate is dry and cool. The coldest months are generally December and January. In the months of September and October, the climate is more unwholesome than at any other time of the year, and people suffer considerably from malarial fevers.

15. The mean yearly temperature ranges from 52°·5 at Baroda to 69°·4 at Mehsana. The minimum temperature during the cold weather months is about 40°·1 and the maximum during the hot weather months 109°·5. The highest temperature recorded in 1910 was 114° in the month of June and the lowest 35° in the month of January at Mehsana (Kadi District). This shows that the climate of the Baroda State and adjoining parts of Gujarat is an extreme one, especially of the northern parts compared to that of the southern parts.

16. The inhabitants of the Baroda State are for the most part agriculturists. The principal crops are juwar, bajri, rice, pulse, cotton, tobacco and oil-seeds. The crops are generally thriving and plentiful in Kadi and western half of the Baroda District. The coast line and the western talukas of the Naosari District are very fertile and yield garden produce, but the south-eastern parts are inferior in fertility, and, owing to rocks and mountains, are hardly cultivable in some places. The Amreli District, as a whole, is much inferior in fertility, but there are very fertile tracts here and there, especially in the Amreli, Damnagar and Kodinar Talukas.

Of the total cultivable land in the State—70,11,339 bighas (a bigha is equal to about $\frac{2}{3}$ of an acre), or 89·7 per cent., is under cultivation and 10·3 per cent. is available for further cultivation. On an average, each individual of the total population has nearly $3\frac{1}{2}$ bighas of land.

17. Small irrigation works are met with all over the Raj, especially what are called "Paddy Tanks" whose object is to protect rice, the chief of the monsoon crops, 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 division of Taluka varies with the nature of the staple crops, nature of the soil and the intelligence, skill, and capacity of the cultivators. Naosari 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 possessing one or more. Baroda Division comes next to Naosari 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 sister Talukas of Kadi and Kalol, where rice is extensively grown. Its cultivation

is, however, falling off, owing to the scanty and ill-timed rain-fall of recent years and the state of disrepair of some of the tanks. Hardly any rice is grown in Amreli Division, and so in it there are no paddy tanks worth the name. This division, however, like Naosari, possesses a few rivers and streams in which there is a flow throughout or nearly throughout the year. In both divisions there are *bandharas* or weirs thrown across such water-courses and the impounded water is led by channels to irrigate the fields. The Allidhar Vellor Bund near Harmadia, the Natalia Bund near Dhari, both in Amreli Division, and the Chikhli, Bandharpada and Tichakia, in Naosari Division, may be mentioned as instances of this form of irrigation.

18. Besides these small paddy tanks, large irrigation works have been constructed at a cost of about 39 lakhs of Rupees. These irrigate about 6,500 bighas of land. All over the State there are again about 18,400 *Kacha* and 60,054 *Pacca* wells. Special Officers were appointed to grant *Tagavi* loans for sinking new wells and some of these wells were built with Government assistance. All these irrigation works irrigate 5.6 per cent. of the area actually cultivated every year.

19. The following table shows the population of the State during the last three decades. It also shows the principal industrial occupations of the people during the period:—

Population.

No.	Occupations.	1911		1901		1891	
		Persons.	Per cent.	Persons.	Per cent.	Persons.	Per cent.
1	2	3	4	5	6	7	8
	Total Population ...	2,032,798	...	1,952,692	...	2,415,396	...
	PERSONS ENGAGED IN INDUSTRIES.						
1	Textile industries	52,433	2·08	68,213	3·49	124,111	5·13
2	Hides, skins, etc.	16,032	0·78	29,173	1·49	37,176	1·53
3	Ceramics	26,743	1·81	26,284	1·33	35,311	1·46
4	Metals and precious stones	16,150	0·79	25,029	1·28	36,442	1·50
5	Building industries	12,931	0·63	15,729	0·80	13,903	0·57
6	Miscellaneous	125,761	6·18	112,885	5·26	183,928	7·60
	Total in industries ...	250,050	22·30	277,313	13·68	430,871	17·83
	PERSONS ENGAGED IN AGRICULTURE.						
7	(a) Land-holders, tenants and sub-tenants.	970,675	47·75	634,688	32·50	1,196,580	49·55
	(b) Labourers	313,479	15·42	372,964	19·10	190,896	7·94
	Total in Agriculture ...	1,284,154	63·17	1,007,652	51·60	1,387,476	57·5

In 1891, the total population was 2,415,396, being the highest on record. In 1901, it dwindled to 1,952,692; because since 1896, plague was raging in some parts of the State and then came the great famine of 1899, which carried away by death and emigration a large number of the people. At the last census, a slight increase was recorded, although during this period also some Districts were suffering from plague.

20. In spite of the sustained efforts of the State to develop industries, it is noticeable that the number of people supported by them is rapidly going down, resulting in more people being thrown on agriculture. In 1891, 430,871 persons, or 17·93 per cent., were supported by industries, while in 1911, 250,050, or 12·30 per cent., were so supported. In 1891, the number of land-lords, tenants and agricultural labourers was 1,387,476, or 57·5 per cent., while for 1911, the figures were 1,284,154, or 63·17. Though the agriculturists suffered the most from the famine of 1899, their number has been augmented from other trades, and they do not, therefore, show a proportionate fall in number. Of the persons engaged in industries except those employed in the building trade, all show a fall both in their total as well as in the general percentage. Of these, those supported by textile industries have suffered the most. In 1891, there were 124,111 or 5·13 per cent. supported by it, while in 1911, the number for the same stood at 52,433 or 2·08 per cent., respectively. Owing to the competition of the modern steam-driven factories, old-styled hand-industries are slowly disappearing. As a result, more and more people are compelled to fall back upon agriculture as their principal means of livelihood.

21. The following table gives the figures of actual workers in different industries. It also shows the percentage of the total population actually working in different industries. The Statistics for 1872 and 1891 are not available, as in these Censuses these statistics were not collected:—

More and more people are leaving industries for Agriculture.

Number of actual workers in different industries.

INDUSTRIAL AND AGRICULTURAL POPULATION OF THE BARODA STATE.

No.	Occupation.	1911			1901			1881		
		Persons actual workers.	P. C. of total popula- tion.	P. C. of actual work- ers.	Persons actual workers.	P. C. of total popula- tion.	P. C. of actual work- ers.	Persons actual workers.	P. C. of total popula- tion.	P. C. of actual work- ers.
1	2	3	4	5	6	7	8	9	10	11
	Total Population ...	2,032,798	...	...	1,952,692	..	...	2,185,005	...	...
	Actual workers	946,769	46·57	...	919,906	47·11	...	1,006,567	46·05	...
	PERSONS ENGAGED IN INDUSTRIES.									
1	Textile industries	25,828	1·27	2·73	33,410	1·71	3·63	75,171	3·44	7·47
2	Hides, skins, etc.	6,865	·34	·73	12,299	·63	1·34	7,892	·36	·78
3	Ceramics	13,756	·68	1·45	12,709	·65	1·38	14,197	·65	1·45
4	Metals and precious stones	6,740	·33	·71	9,587	·49	1·04	10,376	·48	1·03
5	Building industries	5,543	·27	·59	7,015	·36	·76	10,717	·49	1·06
6	Miscellaneous	57,828	2·83	6·11	82,026	4·21	8·91	55,512	2·54	5·52
	Total in industries ...	116,560	5·72	11·32	157,046	8·05	17·06	173,865	7·96	17·27
	PERSONS ENGAGED IN AGRICULTURE.									
7	(a) Landholders and tenants ..	407,153	20·03	43·00	264,180	13·53	28·71	319,449	14·62	31·74
	(b) Labourers	201,224	9·90	21·25	191,124	9·79	20·78	259,205	11·86	25·76
	Total in Agricul'ture ...	608,377	29·93	64·25	455,304	23·32	49·49	578,654	26·48	57·50

All these statistics indicate the same tendency as noted above.

22. The mean density of the population of the State is 248 per square mile. Of the Districts, Baroda is the densest with 311 per square mile.

Density.

Next comes Kadi with 175; Amreli is the least dense with 132 souls per square mile. If we exclude 549 miles of forest area from the total area of Naosari, its mean density would be 246.

23. There are very few towns in the State in the proper sense of the world. Most of the places designated as towns in the Census Reports are merely overgrown villages, and are called towns

Urban and rural population.

because they happen to have a population of 5,000 or more or are the head-quarters of Talukas. Out of every 100 persons in the population, 20 live in towns and 80 live in villages. There are 42 towns and 3,237 villages in the State. All the towns have population of 5,000 and above. Of the villages, nearly two-thirds are very small with less than 500 population.

24. The following table shows the average birth and death-rate in the State during the last six years:—

Birth, death and length of life.

Division.	Population as per Census of 1911.	Ratio of births per mille of Population.						Ratio of Deaths per mille of Population.					
		1916- 17.	1915- 16.	1914- 15.	1913- 14.	1912- 13.	1911- 12.	1916- 17.	1915- 16.	1914- 15.	1913- 14.	1912- 13.	1911- 12.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Baroda City ...	95,867	29·1	28·4	22·9	23·0	17·3	15·9	31·9	36·88	23·4	33·0	32·1	31·0
Baroda Division ...	587,555	30·3	31·7	30·2	20·8	27·9	31·5	28·8	24·1	25·7	27·3	24·9	24·8
Kadi Division...	832,162	28·5	29·3	29·5	30·7	24·5	25·2	23·9	20·2	19·1	21·7	25·8	18·3
Naosari Division ...	335,467	34·4	33·1	31·4	32·0	29·9	34·7	28·0	22·7	25·0	25·8	22·8	26·1
Amreli Division ...	178,269	38·7	38·6	40·6	38·4	28·1	33·2	27·1	18·9	20·5	25·6	32·3	23·9
Total ...	2,029,320	30·9	31·4	30·6	31·0	26·3	28·8	26·7	23·4	22·0	24·9	25·9	22·6

25. It shows that the birth-rate is much higher than the death-rate showing a steady increase of the population except in the Baroda City. Both the birth and death-rates are much higher than in most of the European countries. The expectation of life in the State, as in the rest of India, is about 26 and compares very unfavourably with the average length of life of people in Europe and America.

Name of the Country.	Birth-rate.	Death-rate.	Longevity.
1	2	3	4
United States	24·9	13·5	...
England	19·7	14·8	44
Germany	28·8	17·4	41
France	21·3	19·5	45
Denmark	25·3	13·4	50
Belgium	23·1	15·53	47
Sweden	21·9	14·1	51
Holland	31·6	16·6	48
Russia	42·7	26·0	...
British India	37·13	29·0	...
Bombay Presidency	35·73	40·76	...
Mysore State	18·94	18·07	...
Baroda	30·9	26·7	26

In the State as a whole there are 925 females to 1,000 males.

26. Of the total population, about 83·2 per cent. are Hindus, about 2 per cent. are Jains, 8 per cent. Musalmans, 6 per cent. Animists, 0·4 per cent. Parsis and 0·4 per cent. Christians. All the Hindus and Jains are divided into 352 castes and 195 sub-castes, which prohibit inter-dining and inter-marriage.

27. In the total population of the Baroda State, only 10 persons out of a hundred are literate in the limited sense in which this term was used in the last census, *viz.*, ability to read and write a letter. Taking

the sexes separately, one male in every six can read and write and one female in every 50.

Age.	Total Population.		Number of Literates.	
	Male.	Female.	Male.	Female.
1	2	3	4	5
0-10	277,732	259,217	6,771	2,477
10-15	98,702	80,601	27,175	5,841
15-20	95,573	79,944	24,189	3,230
20 and over	1,85,922	557,101	126,748	8,516
Total	1,057,935	976,863	184,883	20,064

There would thus appear to be 8 literate males to 1 literate female, but it is possible that there has been some under-statement in respect of the latter sex, as amongst some classes of the population there is a prejudice against admitting that women are literate. Of the total number of literate males, 68 per cent. are over 20 years of age and 4 per cent. are under 10. The remaining 28 per cent. are distributed between the age-periods 10—15 and 15—20. In the

case of females, only 43 per cent. of the literate population are over 20, 45 per cent. are between 10 and 20, and 12 per cent. are under 10. The larger proportion of literate females at the lower ages indicates that at the present time the progress of education amongst them is more rapid than in the preceding years.

28. The most favoured part of the State from the point of view of education is naturally the capital City of Baroda. Here 2 males in every 5 are literate. The Baroda District, which on account of its forward population of Brahmans, Vantias and Lewa Kanbis, was the earliest among the Districts to have education facilities, and the Amreli District which was the first to have the boon of compulsory education, come next to Baroda City, with 1 male literate to every 4 illiterate. Then follows Naosari District, which though having the Animists as one-fourth of its population, has on an average, 1 literate male in every 6, owing to its adventurous Parsis, Vohoras and Anavalas. Kadi having a large Thakarda, Koli and Anjana Kanbi population stands last in the diffusion of the rudiments of learning, having only 1 literate male in every 8. The variation in the proportions of educated females, though on a far lower plane, follow generally those noted above. In the City of Baroda, there is one educated female in every 14. Then comes Amreli with 1 in 28. Then follow Naosari and Baroda Districts with 1 in 40 and 54 respectively. Kadi stands last with only 1 educated female in every 90.

(B). Resources of the State.

29. It would be seen from the physical description of the State that it cannot have any rich minerals. As stated below, two geological surveys have been made; and excepting some lime-stones, marbles,

granites, china clay, salt deposits, materials for cement, and ochres there is hardly any valuable mineral found so far. A complete list of the mineral resources of the State with their location, description and the quantity available is given in Appendix V.

30. There are 636 miles of forests mostly in Naosari and the rest in the Baroda and Amreli Districts.

Forests.

All forests may be classed as deciduous and mixed. The most important species of trees are *Sag* (*Sectona grandis*), *Beeya* (*Pterocarpus marsupium*), *Sisham* (*Dalbergia sisoo*), *Sadedda* (*Terminalia tomentosa*), *Khair* (*Acacia catechu*), *Haldwan* (*Adina cordifolia*), and other species of less importance are *Kalam* (*Stenphegyia parviflora*), *Kantee* (*Acacia modesta*), *Dhaman* (*Grewia silicefolia*), *Timru* (*Diospyros melanoxylon*), *Bondara* (*Lagerstroemia lanceolata*), *Asintra* (*Bauhimia racemosa*), *Beheda* (*Terminalia belerica*), *Kagdoli* (*Sterenlia urens*), *Babul* (*Acacia arabica*), *Khakhar* (*Butea frondosa*) and *Bamboo* (*Bambusa arundinacea*). The minor products of economic value are lac, gum, resin, colouring bark, honey, wax, Mahuda flowers, etc. A complete list of these products both major and minor is given in Appendix VI.

31. Agriculture is the most important industry of the State.

Agriculture.

Nearly, 63·17 per cent. of the population directly depend upon it for their maintenance. Of the 70 lacs bighas of agricultural land, 62 lacs are under cultivation. Of these 62 lacs of bighas, 51 lacs were actually cultivated during 1917-18. The following table shows the principal crops sown:—

Serial No.	Crop.	Bighas.	P. C. of total.
1	2	3	4
1	Cereals and pulses	2,808,901	54·9
2	Wheat	195,925	3·8
3	Oil-seeds.—		
	Rape-seed	95,216	1·9
	Castor	190,450	3·7
	Sesamum	146,672	2·9
	Other oil seeds	7,762	·2
	Total Oil-seeds	440,100	8·7
4	Cotton	1,402,725	27·4
5	Tobacco	89,401	1·8
6	Sugarcane	5,072	·1
7	Other crops (including minor fibres and intoxicating drugs, colouring materials, garden crops, etc., etc.)	173,823	3·3
	Total area cropped	5,115,947	100·0

Most of the food-stuffs are consumed locally, but the commercial crops, such as oil-seeds, tobacco, cotton, etc., are exported either to other parts of India or to foreign countries. Naosari cotton and Petlad tobacco are well known in trade and command good prices. The yellow rape and castor of Kadi are of superior variety.

32. The tables given in Appendix VII. and VIII. give the export and import trade of the State during the last three years. The statistics are collected from the Rail-borne trade returns for the three Gujarat Districts, only the Rail-borne statistics of the two maritime Talukas being unavailable. The Sea-borne returns are for the two maritime Talukas of Kathiawar.

33. The most important industry connected with agriculture is the Dairy industry, specially of Charotar in Gujarat and of Gir in Kathiawar. Almost every cultivator keeps a buffalo and utilises the milk either for his domestic use or for the manufacture of ghee. But this industry has been very greatly developed in Charotar (Baroda District). In almost every important village, there is a Cream Separator. The merchant separates the cream and sells it to Bombay or Ahmedabad butter factories, while the separated milk is either thrown away or casein is extracted from it. From the Gir, ghee is exported either to Bombay or to other parts of Kathiawar. This trade is more or less common all over the State.

34. The number of live-stock in the State for 1916-17 may be seen from the following table:—

Live-stock.

Plough cattle.	Cows and bulls.	Buffaloes.	Horses, mules and donkeys.	Sheep and goat.	Total.
1	2	3	4	5	6
380,547	261,756	332,124	45,913	347,070	1,367,410

They supply, besides dairy products, a fairly good trade in hides and bones, most of which are exported to Bombay.

35. The following table shows the land under cultivation, the number of registered Khatedars, agricultural stock, carts, ploughs and plough and other cattle in the State during the last 12 years. It shows a steady rise in agricultural prosperity. The heavy loss caused during the famine year of 1899-1900 is being gradually but steadily made good.

Agricultural Stock and Implements.

Serial No.	Year.	Land under cultivation (bighas).	Khatedar.	Ploughs.	Ploughs per Khatedar.	Plough cattle.	Cultivated land per pair of plough cattle (bigha).	Carts.	Carts per Khatedar.	Other domestic cattle.	Remarks.
1	2	3	4	5	6	7	8	9	10	11	12
1	1905-06	5,469,634	304,567	144,845	2.10	315,431	34.68	57,007	.19	391,487	
2	1908-09	6,089,384	308,039	149,034	2.07	322,115	37.81	59,250	.19	472,411	
3	1909-10	6,074,322	307,753	151,664	2.03	324,801	36.78	69,946	.23	500,416	
4	1910-11	6,122,459	307,958	155,726	1.98	341,535	35.85	70,362	.23	549,885	
5	1911-12	6,108,288	307,507	152,644	2.01	331,494	36.84	70,224	.23	513,419	
6	1912-13	6,135,577	311,548	155,485	2.00	339,914	36.10	71,198	.23	527,151	
7	1913-14	6,195,901	313,853	160,513	1.96	355,516	34.86	72,750	.23	553,066	
8	1914-15	6,232,571	317,846	164,448	1.93	360,905	34.54	73,008	.23	563,099	
9	1915-16	6,249,514	318,049	165,232	1.92	367,482	34.01	73,879	.23	563,099	
10	1916-17	6,292,465	321,570	178,297	1.80	380,547	33.07	73,605	.24	593,880	

It may be mentioned here that the table does not disclose the real condition. All the land under each holding is not situated in a compact field. Each Khatedar has, in his holding, from 2 to 10 or even more pieces of fields all scattered over the village area. Most of the Khatedars have again sub-partners whose names do not appear on the register. In the table, Khatedars owning land 5 bighas and under are shown to be 28·6 per cent. of the total number. As a matter of fact, this number is much larger than given above. Gujarat is a country of small holders and intensely fragmented holdings.

36. The following table gives the size of the *Khatas* (registered holdings). It shows that about 75 per cent. of the Khatedars own less than 25 bighas of land:—

Year.	Size of the holdings.						Total.	Remarks.
	Five bighas and under.	Between 5 and 25 bighas.	Between 25 and 100.	Between 100 and 500.	Above 500.			
1	2	3	4	5	6	7	8	
1910-11	88,397	144,918	67,708	6,597	388	307,958		
1911-12	89,347	146,705	67,778	6,342	335	307,507		
1912-13	88,766	144,649	71,420	6,406	307	311,548		
1913-14	90,213	146,751	70,270	6,287	331	313,853		
1914-15	92,554	149,045	69,385	6,519	343	317,846		
1915-16	91,876	150,629	70,055	6,390	399	318,649		
1916-17								
Baroda ...	36,188	49,131	19,268	2,159	181	106,877		
Kadi ...	37,297	74,145	31,320	1,355	83	144,200		
Naosari ...	16,723	23,295	11,576	1,271	76	52,941		
Amreli ...	1,930	5,414	8,150	1,979	79	17,552		
Total 1916-17	92,088	1,51,985	70,314	6,764	419	321,570		
Percentage ...	28·6	47·3	21·9	2·1	·1	100·0		

37. The table in the margin shows the caste of cultivators. Most of the Brahmins and Banias do not cultivate their land. They rent it out to

Caste.	Number.	Percent.
1	2	3
Brahmins and Banias ...	45,746	14.1
Kanbis	94,270	29.0
Rajputs	15,187	4.7
Thakardas and Kolis ...	55,004	17.0
Musal'mans	15,201	4.7
Kali Paraj	14,486	4.5
Miscellaneous	84,423	26.0
Total	3,24,317	100.0

other cultivators. Of the rest, the Kanbis are the best cultivators, hardy and usually thrifty and well supplied with cattle and implements. As a general rule the Rajputs, Mahomedans, Thakardas and Kolis are very inferior as cultivators. Fields belonging to most of them are very badly cultivated and their income therefrom, even in good years, is much smaller than that of Kanbis. In the last miscellaneous group are included the artisans, the village servants and the day labourers who own

about a bigha or two of land and cultivate it as a subsidiary occupation.

38. The principal tenure in the State is the Ryotwari or the individual tenure, under which the farmer pays the rent direct to the Government without the intervention of a third

Land tenure—Ryotwari system.

party. The land is surveyed by the Settlement Department and the assessment which the farmer has to pay to the State is fixed after determining its quality. The land is re-assessed at intervals of from 15 to 30 years. During the interval, the Ryot pays the same rent in cash annually. In theory, this rent is supposed to be half the economic rent or one-sixth the gross produce. While assessing the land, the prices of the produce, the productivity of the soil, the development of railways, etc., are looked into. Then a lump sum is fixed for the Taluka and is then apportioned over villages and plots of farms. The Ryot is expected to pay the assessment every year, (and for all years) even though a particular season may fail. The theory at the back of it is that the Ryot is expected to save something in good years to meet the fixed Government demand when crops fail, thus indirectly inculcating in him the economic and moral virtues of thrift and prudence. As a matter of right, the tenure-holder cannot ask for any suspension or remission of the rent; but in bad years when crops have failed, to avoid hardships the Government has made rules for the suspension and remission of the assessment. So long as the Ryot pays the annual dues and observes all the conditions of the tenure, the State cannot deprive him of the possession except on the payment of compensation. He has full alienable and inheritable right in the land. He can sell or mortgage it as he likes.

No other restrictions are imposed upon the tenure, nor any charges made in the terms of it.

39. Out of 3,279 villages in the State, 2,684 are settled on this tenure. Of the rest, 373 are on mixed tenure, all paying lump sums annually, while 222 villages are alienated to charitable institutions or as rewards for good services.

40. All the State land is held by 321,570 Khatedars. This number has increased since 1901 when the number was 253,374. In the latter year the average size of the Khata was 12 bighas, and now it is 20 bighas. The following table shows how this change is working for the last 12 years:—

**More land acquired by
cultivating Khatedars.**

Year.	Khatadars that cultivate their own land.		Bigbas.		Bigbas per head of Khatadars.		Others Non-cultivating Khatadars.		Bigbas.		Bigbas per head of Non-cultivating Khatadars.		Total of Khatas.		Total of 3 and 6 (bigbas) under cultivation.		Average land per Khatas.	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1905-06	258,636	4,333,807-9-18	17	45,931	1,135,826-10-15	24	304,567	5,469,634-0-13	17 ³									
1906-07	259,020	4,333,772-5-3	16	49,968	1,195,281-16-11	27	308,988	5,529,054-1-14	18 ³									
1907-08	252,603	4,767,618-7-12	18	53,976	1,288,657-0-10	23	306,579	6,056,275-8-2	19									
1908-09	254,049	4,818,019-15-10	19	53,990	1,271,328-12-15	23	308,039	6,089,348-8-5	19									
1909-10	253,812	4,859,437-2-0	19	53,941	1,214,884-12-5	22	307,753	6,074,321-14-5	19									
1910-11	249,449	4,771,660-13-7	19	58,509	1,350,797-16-17	23	307,958	6,122,458-10-4	20									
1911-12	250,256	4,828,291-4-18	19	57,251	1,277,996-9-8	22	307,507	6,105,287-14-6	20									
1912-13	258,424	4,749,310-0-19	19	58,124	1,386,267-0-9	24	311,548	6,135,577-1-8	20									
1913-14	255,442	4,787,608-4-9	19	58,411	1,408,293-2-5	24	313,853	6,195,901-6-14	20									
1914-15	258,817	4,849,064-1-6	19	59,029	1,383,506-14-3	23	317,846	6,232,570-15-9	20									
1915-16	258,156	4,848,916-6-4	19	60,493	1,405,597-10-14	23	318,649	6,249,513-16-18	20									
1916-17	260,130	4,871,155-6-7	19	61,440	1,421,309-14-19	23	321,570	6,292,465-1-6	20									

41. The following table gives the transfer of land from agriculturists to non-agriculturists and *vice versa* and among themselves, during the last 8 years. It shows that the non-agriculturists are, to a certain extent, taking possession of the land from the agriculturists.

Year.	From agriculturists.		From non-agriculturists.	
	To agriculturists (in bighas).	To non-agriculturists (in bighas).	To agriculturists (bighas).	To non-agriculturists (bighas).
1	2	3	4	5
1909-10	48,778	13,458	3,345	4,492
1910-11	43,019	17,298	4,474	5,873
1911-12	48,340	18,025	6,834	8,537
1912-13	65,033	15,369	8,490	7,272
1913-14	63,336	15,587	7,635	7,472
1914-15	87,376	19,730	8,890	11,031
1915-16	1,05,902	24,216	7,961	11,471
1916-17	66,892	17,864	6,820	5,151

42. The general course of prices in Baroda is indicated in the following table which exhibits the variations in average retail rupee prices of nine articles, *viz.*, rice, wheat, bajri, jawar, tur, gram, salt, ghee and fire-wood during the official years 1904-05 to 1917-18, for the four Districts of the Raj. The average retail price of each of these articles for the years 1904-08 is taken to be one hundred, that is, the above-mentioned period has been selected as the standard or basic period for the purposes of estimating the fluctuations in the price level; and the prices of the nine articles referred to in the different years, are accordingly turned into percentages of this figure. The sum of these relative prices, divided by 9 (the number of commodities) constitutes the index number for the year:—

Years,	Index Number.
1	2
1904-08	100
1908-09	97
1909-10	102
1910-11	109
1911-12	112
1912-13	116
1913-14	115
1914-15	116
1915-16	125
1916-17	120
1917-18	142

The following table gives the wages paid during the last eleven years in the four principal trades in the State. It shows a steady rise all round:—

Year.	Districts.			
	Kadi.	Baroda.	Naosari.	Amreli.
	2	3	4	5
1	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
	AGRICULTURE.			
1906-07	0 6 0	0 4 0	0 3 6	0 4 6
1907-08	0 5 0	0 8 0	0 4 0	0 5 6
1908-09	0 5 0	0 6 0	0 4 0	0 6 0
1909-10	0 5 0	0 6 0	0 4 0	0 5 0
1910-11	0 5 0	0 6 0	0 4 6	0 5 6
1911-12	0 5 6	0 6 0	0 4 6	0 5 0
1912-13	0 5 6	0 6 0	0 4 6	0 5 0
1913-14	0 5 6	0 7 0	0 5 0	0 5 0
1914-15	0 6 0	0 7 0	0 5 0	0 5 0
1915-16	0 5 0	0 7 0	0 5 0	0 5 0
1916-17	0 6 0	0 8 0	0 7 0	0 6 0
	BLACKSMITH.			
1906 07	0 10 0	0 9 0	0 12 0	0 9 0
1907-08	0 11 0	0 10 0	0 12 0	0 10 0
1908-09	0 12 0	0 10 0	0 13 0	0 10 0
1909-10	0 13 0	0 10 0	0 13 0	0 10 0
1910-11	0 11 0	0 10 0	0 14 0	0 10 0
1911-12	0 11 0	0 11 0	0 14 0	0 10 0
1912-13	0 11 0	0 10 0	0 15 0	0 10 0
1913-14	0 11 0	0 13 0	0 15 0	0 10 0
1914-15	0 11 0	0 12 0	0 15 0	0 10 0
1915-16	0 12 0	0 12 0	0 15 0	0 10 0
1916-17	0 12 0	1 0 0	1 0 0	0 12 0
	BRICK-LAYER			
1906-07	0 11 0	0 9 0	0 15 0	0 11 0
1907-08	0 13 0	1 0 0	0 14 0	0 12 0
1908-09	0 13 0	0 12 0	1 0 0	0 13 0
1909-10	0 14 0	0 12 0	1 0 0	0 12 0
1910-11	0 14 0	0 12 0	0 15 0	0 13 0
1911-12	0 13 0	0 11 0	1 0 0	0 11 0
1912-13	0 13 0	0 12 0	1 0 0	0 12 0
1913-14	0 14 0	0 15 0	1 0 0	0 13 0
1914-15	0 14 0	1 0 0	1 0 0	0 13 0
1915-16	0 14 0	1 0 0	1 0 0	0 12 0
1916-17	1 0 0	1 0 0	1 0 0	0 14 0
	CARPENTER.			
1906-07	0 12 0	0 14 0	0 13 0	0 11 0
1907-08	0 14 0	1 4 0	0 14 0	0 12 0
1908-09	0 15 0	1 0 0	0 14 0	0 12 0
1909-10	0 15 0	1 0 0	0 15 0	0 12 0
1910-11	1 0 0	1 1 0	1 0 0	0 12 0
1911-12	0 15 0	1 0 0	1 0 0	0 11 0
1912-13	0 14 0	1 2 0	1 1 0	0 12 0
1913-14	0 15 0	1 4 0	1 1 0	0 13 0
1914-15	0 15 0	1 4 0	1 1 0	0 13 0
1915-16	0 15 0	1 7 0	1 1 0	0 12 0
1916-17	1 0 0	1 8 0	1 4 0	0 12 0

43. Before the era of modern industrialism, under the influence of which many factories of modern type have grown up in Gujarat, there were found all over the State, a number of small industries. Every village and every town had a full complement of smiths, carpenters, tanners, weavers, brass-workers, etc., who supplied the needs of the local people. Some towns were noted for their special manufactures; Pattan for Patolas, Visnagar for brass and wood work, Kadi and Pattan for cutlery, Sankheda for horn and lacquer work, Billimora and Naosari for wood-carving, Baroda and Pattan for silk and gold thread weaving, Padra, Kathor and Nandol for dyeing and printing, Baroda for glass-ware, Dabhoi for turbans, Billimora for ship-building, etc. All these were hand industries carried on by artisans mostly in their homes. But owing to the sudden competition of cheap foreign articles and the change in the tastes of the people, most of the hand industries died out or are in process of decline, and as may be seen from the preceding paragraphs, the number supported by them has also been going down. During this period, except in one case when silk and gold-lace weavers were imported into Baroda from Ahmedabad, no serious attempts appear to have been made either to revive the old industries or to start new ones.

44. The real work of developing the natural resources of Baroda, of reviving wherever possible the old industries and introducing modern industries dependant upon improved machinery and scientific research commenced with the reign of the present Maharaja. From the time H. H. the Maharaja came to the throne, he perceived the complete absence of modern industries, and initiated various measures for their introduction. The steps taken by His Highness' Government and the result of the State policy may be seen from the following paragraphs. The early eighties was a period of reconstruction in the State; it had to be efficiently re-organised and its administration improved. As a beginning, a few model factories, such as cotton and sugar mills, were started. The people also organised a few small industries, such as, pencil-making, button and soap-making; but the promoters lacked scientific knowledge and information and most of the enterprises failed. The second period in the industrial development commenced with the early nineties. Then the State took some more comprehensive measures; the Kala Bhavan and the Museum were started; a number of students were sent to Europe to be trained in industries; railways were built all over the State; loans were given to new industries at a low rate of interest; custom duties were revised, and on the whole a very sympathetic policy was adopted. This is the period when the foundation of modern industrial development was laid. The result of these various activities was that a number of small industries grew up all around—flour and rice mills, cotton ginning and press factories, etc. As was to be expected, some of the concerns failed and the factories changed hands, and went under the management of competent business-men, and prospered.

45. The third period in the industrial progress began with the year 1905. Under the influence of the Swadeshi movement all over the country, new industries were started; the State also took advantage of the enthusiasm of the people and extended itself to all the new ventures that were started with loans and in many other ways. A special Department of Commerce and Industry was organised. The Bank of Baroda, Ltd., was started to finance local industries, import and export duties were abolished, rules were laid down for the development of Commerce and Industries clearly defining the industrial policy of the State and the terms and conditions on which it was prepared to grant concessions.

46. The result of this policy may be seen from the following table which shows the number of modern industries of some importance, small and large, working at the present moment:—

**Number of Industries in
the State.**

Kind of Factory.	Power used.			Total.
	Steam power.	Oil engine.	Hand power.	
1	2	3	4	5
Ginning Factories	86	7	4	97
Oil Mills	4	4	...	8
Cotton Presses	15	...	...	15
Cotton Mills.	4	...	...	4
Distilleries and Chemical Works	2	...	1	3
Metal Works ... ..	...	2	...	2
Cutlery Works ... ..	...	1	...	1
Agricultural Water Pumps	4	63	...	67
Rice Mills	2	5	...	7
Flour Mills ... ..	...	19-1	...	20
		Electric.		
Flour, Rice, Oil Ginning Factories (combined)	2	28	...	30
Dyeing Factories	4	...	...	4
Soda Water Factories	1	1-1	4	7
		Electric.		
Ice Factory	1	...	...	1
Printing Presses ... ..	...	4	9	13
Slate and Slate-pen Factories	1	2	3	6
China Clay Refinery ... ..	...	1	...	1
Kala Bhavan ... ..	...	1	...	1
Furniture Works ... ..	...	1-1	...	2
		Electric.		
Electric Works	1	...	...	1
Brush Factory ... ..	...	...	1	1
Leather Factories ... ..	...	...	2	2
Coach Factories ... ..	...	...	5	5
Glass Factory ... ..	...	...	1	1
Silk Weaving Factories ... ..	...	...	2	2
Brick and Tile Factories ... ..	...	2	3	5
Candle Works	1	...	1	2
Sugar Factory	1	...	...	1
Chocolate Factory ... ..	...	1	...	1
Stone Saw Mills ... ..	...	2	...	2
Total ...	129	147	36	312

47. From the time His Highness the Maharaja assumed the control of the State affairs he has shown a keen desire to develop railway facilities of the State and to connect all the important parts by railways. The following is the statement of open lines:—

Railways.

Ownership.	Miles.				Capital invested.
	Broad gauge.	Metre gauge.	Narrow gauge.	Total.	
1	2	3	4	5	6
Baroda State ...	21	246	257	524	Rs. 2,19,49,817
Foreign ...	121	86	2	209	...
Total ...	142	332	259	733	...

Besides these, there are 129 miles under construction on which Rs. 46,76,604 are spent upto the end of March 1918. There are only two important Talukas—Kodinar and Dwarka in Kathiawar that remain to be connected. Railways are shortly going to be constructed there too.

48. It will be seen from above that for every 11 square miles of Baroda territory, there is a mile of railway. **Railway Finance.** The railways have been constructed out of the savings of the State. They pay about 5½ per cent. on the total investment. Almost all the railways are feeder lines and are managed by the main lines—mostly by the B. B. and C. I. Railway.

49. The territories of Baroda State are mostly situated inland except at two places in Kathiawar and one in Gujarat. **Ports, Sea and River.** There are two sea-ports, one at Rupen in Okha, and the other at Mul Dwarka in Kodinar. These are fair weather ports; and most of their trade is local. They are not connected with any railways. However, there are two possible ports just near these—Beyt in Okha and Velan in Kodinar—which are far superior not only to the other Baroda ports but to the rest of the Kathiawar ports. Both these, with some improvements, could be turned into important ports with safe harbours. Soundings have been taken and other inquiries have also been made and the services of an expert Harbour Engineer have been asked for to finally decide upon the improvement schemes. Since adjoining Native States are going to build the railways that will ultimately connect these ports with the main land, the development of these harbours would be undertaken as soon as possible.

50. There is only one important river port in Gujarat, *viz.*, Billimora, the river port. Billimora in the Naosari District on the B. B. and C. I. Railway main line. It is an old port and was quite an important one before the advent of

the railway. But since the construction of the latter, the port has dwindled down as the railway has imposed discriminating rates against Billimora. This has led to its legitimate traffic being diverted.

51. The total produce from the land during the last eight years, for which approximate figures are available from the Revenue Department, is on an average for one year about Rs. 6,90,00,000. This includes income from food and non-food stuffs including grass, etc., but does not include income from dairy, fruit trees and other sources besides agriculture. At the most, the income from these sources cannot be more than one-third of it (*i.e.*, Rs. 2,30,00,000) making a total of Rs. 9,20,00,000. This brings the average to Rs. 45 per head of population, which may be taken as an approximate estimate.

The following table gives the various sources of Government revenue from taxation in the year 1916-17:—

	Rs.
Land Revenue	1,20,24,543
Local Cess	7,56,654
Other Taxes	2,08,470
Customs	1,31,281
Excise	22,89,660
Stamps	7,18,183
Court and Registration fees	1,58,534
Total	1,62,87,331

Taking the population of the last Census, the incidence of taxation per head of population comes to Rs. 8 per head. The average income per head in the State roughly speaking is Rs. 45. Out of this Rs. 8 or 18 per cent. have to be paid in taxes.

Besides this, the people of the Baroda State have to pay indirectly certain British taxes such as Customs and Salt Duty.

52. Appendix IX gives the various sources of the State revenue as well as the different items of expenses. The figures are for the year 1917-18. The State has got a surplus of Rs. 2,39,04,367 which is invested with several banks in Baroda and Bombay as well as in Government of India and other securities. At the end of 1916-17, this sum amounted to Rs. 2,15,98,578. The main purpose of this reserve is to meet the requirements of famine years when the revenue may not be coming in full and the ordinary as well as extraordinary requirements have to be met with.

53. There are about ninety Government of India Post Office Savings Banks throughout the Raj, which received Rs. 39,80,000 as deposits from Baroda subjects in 1913.

(C). Present Position—General Survey.

54. In the foregoing paragraphs, we have given the most important statistical and other information which may give us some idea of the economic condition of the people of the State. But before we leave this part of the Report we would like to summarise the most important features of the problem so that it may help us in the discussion that follows.

Summary of the important features of the Economic Life.

55. If we carefully analyse the statistics given above, three important facts stand prominent:—

Three Cardinal Facts.

- I. *Low Income*:—The income of the people of the State is very low. The average income per head of population is Rs. 45 per year. In these days of high prices, it is impossible that a man can maintain his physical efficiency on this income. There must be thousands of men who must be under-fed and under-clothed, and who must be eking out a miserable existence. A nation permanently placed on a deficit economy can never make any progress in civilization.
- II. *Low Vitality of the People*:—From the high death and birth-rates and from low average of the length of life can be seen the low vitality of the people; and it is no wonder that thousands fall victim to any epidemic that comes. Low vitality results in low economic efficiency.
- III. *Illiteracy*:—A very large number of the people, especially the females, are illiterate. In an old country like India, with its multiplicity of castes and creeds, with its people living mostly in small isolated villages, with the social and economic life based on deficit economy one has to imagine the effects of illiteracy on the life of the masses.

56. We will examine these three facts in some details and indicate in a general way the lines for future development.

A few general facts.

The main source of livelihood of the people is agriculture; nearly 66 per cent. of the people depend upon it for their maintenance. About three-fourths of the territories are liable to draught at certain intervals. The holdings of the cultivators are small and the fields scattered; they have not full complement of cattle and implements; nearly half of them are very inferior as cultivators, most of them are highly indebted, carrying a load of debt that crushes them. And hence, their incomes are small and uncertain. On account of the unrestricted competition of foreign goods most of the old industries have died out and have thrown the people on agriculture, while modern industries, in spite of the solicitude of the Government, have not made any appreciable progress.

Most of the people are illiterate and live in small isolated villages. Their houses and their surroundings are insanitary and their knowledge of personal hygiene is very elementary. Being poor and illiterate they are generally ignorant and superstitious; and they generally oppose all measures intended for their improvement.

57. The all important problem for the Baroda State is to improve the productivity of the land and increase the industrial efficiency of the worker. The energies of the State should, therefore, be directed towards the two ends

Problem: Increase of wealth and efficiency of the worker.

—to utilise all the resources of the State to the fullest extent and to train the people physically, intellectually and morally, so that they may be better able to carry out their economic betterment. What is wanted is a steady and sufficient income so that there may result a surplus of wealth and energy for a higher standard of life.

The problem is certainly very difficult and complex and could not be solved in a few years and by a few half-hearted measures. Persistent efforts must be made and all the resources of the State in men and money should be so directed that maximum results may be achieved. It will be our endeavour to indicate in the following paragraphs the various steps that in our humble opinion the State should adopt for the economic development of its subjects. It will be our duty also to point out the limitations by which Baroda State, which is in no sense economically independent of India as a whole, is bound; and also the desirability of an altered policy for the country as a whole.

PART II.

**The steps taken by the State
during the last 30 years to develop
its Economic Resources.**

PART II.

CHAPTER I.

EDUCATION.

(A). Preliminary Considerations.

58. For an orderly economic progress, two conditions are absolutely necessary:—(I) the people must be educated, or to put it very mildly they must be literate and (II) they must be healthy and must live in sanitary surroundings. Unless these conditions are fulfilled there can never be any hope of a stable and abiding civilization. It is almost impossible to teach even the rudiments of any Art, Science, Trade or industry to an illiterate population. Nor could their efficiency as workmen ever increase so long as they live in insanitary conditions and fall an easy prey to disease.

**Education and Sanitation
necessary for Economic
Development.**

Let us now see what has been done for the spread of education among the masses and the improvement of sanitation of the people. Under education we will deal with general education, reserving the question of technical education to be treated separately later on.

59. In para. 27 of this Report, it has been pointed out that out of 1,055,935 males in the State, 184,883, or 18 p.c., and out of 976,863 females, 20,064, or 2.1 p.c., are literate. This percentage of literacy though so low is much higher than anywhere else in India except perhaps in Cochin and Travancore.

Education.

60. The comparatively high level which Baroda has attained in the education of its people is the result of the care bestowed during the last thirty years. Prior to the accession of the present Maharaja to the *Gadi* in 1875, the rulers of Baroda paid practically no attention to the education of their subjects. In 1871, there were only one English and four primary schools in the whole State and the total expenditure on education was only Rs. 13,000 or less than one-hundredth of what it is now. The knowledge of reading and writing was confined to a few persons of those castes whose traditional occupations as priests, traders or Government servants necessitated it, and who acquired it in private schools maintained by themselves. The great mass of the people were sunk in the deepest ignorance with few thoughts

**Progress of Education in
Baroda.**

beyond the provision for themselves and their families of the bare necessities of life. The question of education was taken up in right earnest in 1881, when His Highness the Maharaja Sayaji Rao Gaekwad assumed the powers of the State. A regular Education Department was created and schools both primary and secondary were opened in all the Districts of the State. Their number increased from year to year and there were in 1917-18 in the whole State 2,977 primary schools, 60 Secondary schools, including 7 High Schools (of which 1 is for girls), a College which teaches upto the highest examinations of the University of Bombay in Arts and Science, and 3 Training Colleges for male teachers and 1 more for women teachers. In addition to these there are some special institutions like the Kala Bhavan (School of Arts), Music Schools, Orphanages, Sanskrit Schools and Night Schools. The children of the depressed classes, in addition to having the ordinary schools open to them, have also special schools established for them. Boarding schools have been opened for them, as also for the children of the aboriginal tribes, in which children of these backward classes are housed, fed and educated. The Maharaja has most at heart the education of his people, and in no Department of the administration is the far-sighted liberality of His Highness more conspicuous than in education and in none are the results more real and tangible.

61. Baroda is the only State in the whole of India in which primary education is both compulsory and free. In January, 1893, immediately on his return from Europe, His Highness the Maharaja Gaekwad decided to take the bold step of introducing compulsory education in one part of his State, as an experimental measure, and selected Amreli Taluka in the Amreli District, for the purpose. The rules framed were that all boys between the ages of 7 and 12 and all girls between the ages of 7 and 10 should attend schools. The guardian of a child of this age absenting for 10 consecutive days or for 15 days in any month, was made liable to a small fine. On these lines, schools were opened in 10 villages in May, 1895, in 10 other villages in December 1897, and in twenty more villages in November 1899. In February 1901 and in July 1904, two more villages were provided with such schools bringing the total to 42 villages. This experiment having proved successful, the idea of extending compulsory education to all the parts of the State, which had for a long time engaged the attention of His Highness, at last took a definite shape and the Amreli rules were embodied in a Law in 1906. The rules were subsequently revised and the maximum age for boys was raised to 14 and for girls to 12. Exemption from compulsory attendance is granted to children under certain specified conditions, such as, physical or mental infirmity. The highest standard for study under the Compulsory Law is the Fourth and the parents and guardians of children of the compulsory age are liable to a fine in case they fail to send such children to school for 45 days in three months. In March 1907, at the time of the celebration of the Silver Jubilee of his reign, His Highness was pleased to make education absolutely free

in all the Vernacular Schools, thus conferring a real boon on his people.

62. The total number of pupils attending the Institutions given above was 242,066. Of these, 575 were in the Arts College, 19,195 in the Secondary Schools and the remaining 231,871 attended the Primary Schools and Special Institutions. Out of the total number of children, 158,254 were boys and 85,812 were girls. Comparing the number of institutions with the number of towns and villages in the whole State, there is on an average one Institution per town or village. Taking 15 per cent. of the total male population as the average number of boys of school-going age, the number of boys enrolled in schools during the year is 90.5 per cent. of the school-going age. Reckoning 12% as the average number of girls of school-going age compared to the total female population, the percentage of girls at schools comes to 73 per cent. of that number.

63. Compulsory education *per se* does not solve the problem which it is intended to do. For a complete scheme, it is necessary to supplement the efforts by establishing libraries in towns and villages so that the information about the current topics of popular interest may be available to the remotest village of the State. As an experimental measure, therefore, Circulating Libraries were established, and when they proved their utility, a new Department, known as the Central Library Department, was opened. The Palace Library of His Highness the Maharaja Saheb contained a very large collection of useful and important books. This was handed over to the new Department to form the nucleus round which it was to grow. An American Expert was engaged in 1910-11 to organise the new Department who placed it on its present footing. The Library Department consists of the following sections:—

I. *Central Library at Baroda*:—having

- (a) a Reading Room subscribing 255 papers and periodicals;
- (b) a Circulation or lending branch;
- (c) a Reference Library;
- (d) a children's branch;
- (e) a Ladies' Library Branch; and
- (f) a Sanskrit Library.

II. *District Libraries Section*:—

It has opened and is maintaining and supervising over 496 Libraries and 52 Reading Rooms in towns and villages of the State. Of these, 3 are District Libraries, 39 Town Libraries and 454 Village Libraries.

III. *Travelling Libraries Section*:—It has

- (a) 444 Library boxes meant for circulation;
- (b) 14,000 books in stock; and
- (c) it circulates about 10,000 books per year.

IV. *Visual Instruction Section*:—

This section educates the people in agricultural, industrial, economic, sanitary, educational and such other matters with the help of

- (a) Magic Lantern and Cinema Shows; and
- (b) Stereographs and such other pictures.

The Cinema Branch has two large machines; three parlour or Kok machines, one Magic Lantern and one Radiopticon Projector. The branch arranges lectures which are illustrated with the help of one of these machines. The attractions of illustrations popularize the lectures to a large extent. For this purpose, there are 70 Standard Films and 33 Parlour Films (7 agricultural, 23 Industrial, 14 Scientific and educational, 18 Military, 26 Scenic and 15 Comic), 1,177 Magic Lantern slides and 1,000 picture post cards. The Stereograph Branch distributes stereoscopes to different centres for the enlightenment of school-boys and people. There are 50 stereoscopes and 5,400 stereographs in this Branch.

64. The total expenditure of the whole Education Department, is Rs. 22,82,887 or 12.1 per cent. of the total expenditure in the State. Per head of population it comes to Rs. 1-2-0.

65. It is beyond the scope of the inquiry for which our Committee is appointed to go into details and point out the improvements that could be made in the general educational system of the State. However, we deem it our duty to point out certain features of this general educational system of the State that are liable to exercise some adverse effect upon the industrial efficiency of the people. During the course of the inquiry, it was often brought to our notice that the education that is at present given in our schools makes the boy unfit for any industry or manual work. No sooner he leaves the school his sole desire is to get some Government or other service. A cultivator's son after passing his Seventh Standard seldom returns to his ancestral calling of agriculture. Even the sons of artisans like carpenters, blacksmiths, etc., are found unwilling to follow their family trade. In the middle and higher classes of Indian Society it is generally not considered respectable for a man to follow any trade or industry where he has to work with his own hands. No doubt, this prejudice is slowly disappearing, but the fact is still there; and the sons of artisans and cultivators when they get some education,

try to follow in the footsteps of their social superiors. For this result the present system of mere book education is to be blamed.

66. If we carefully analyse the causes of this apathy of the educated boys to follow their own trade, we shall find that the fault lies both with the organisation of trade and agriculture as well as with the system of education. Already, land is overcrowded; there are more men than it can fully support. Again, agriculture is very risky. There are failures of crop at certain intervals and farmers have always to remain under great anxiety. The life in the villages is full of drudgery and hardships. On the other hand, Government service gives a man a fixed income and a chance to rise by promotion. The training that he has received at the school just fits him for service. That training does, in no way, create a love for agriculture or the village life. Therefore, after he has left his school, his first ambition is to enter Government service and if this is not available some other service.

67. If this diagnosis is correct the remedy is not alone the readjustment of the curriculum of the schools but in the reorganisation of the agricultural industry of the State in such a way that all the best brains of the village may be induced to stay there and devote their energies to the development of agriculture. Of the reorganisation of agricultural and village life we shall speak later on; but here we shall make a few suggestions to improve the school curriculum in such a way that love for rural life and rural calling as well as for handicrafts may be created among the population.

68. At present, too much attention is paid to subjects that have nothing to do with the industrial life of the people. The studies provide a general and literary education without any special purpose. This is, we consider, a fundamental mistake. In a poor country like India where a vast majority of the people have to live by their own labour a purely literary type of education is not only unsuited but is dangerous. In Baroda where education has been made compulsory this system is likely to create much adverse results than elsewhere. We say "unsuited" because service or literary careers could not be found for all the educated boys and "dangerous" because it will leave the industries in the hands of the least efficient and enterprising men. Therefore, before the evil spreads and the country-side is denuded of its best brains, efforts should be made to remodel the schoolcourse and make it more practical and co-ordinated with the real life of the people for whose welfare it is intended.

69. For a steady development of industrial intelligence and enterprize, it is necessary to foster the creative instincts in the child. These instincts when well developed lead to originality, creativity, initiation and thinking

power and when the boy gets confidence about his creative powers he ventures into new experiments. The primary and secondary school curricula ought to be so arranged as to gradually develop these creative instincts and powers of the child; and this means opening of kindergartens or attaching of kindergartens to primary schools where instincts and capacities of children may be observed with a view to develop creative intelligence. The existing school curricula have not taken notice of this factor to any appreciable extent. In imitation of foreign countries, they have included some subjects such as Drawing, Sloyd, and Manual Training; but these subjects are not co-ordinated with the main purpose of education and the result is that while there are so many subjects of general interest there is none which appeals to the child's creative instincts.

This leads us to the second defect in the curricula which is that the whole work of the schools is planned to a wrong aim. Knowledge for its own sake is a good ideal. But it is good in a community where only a few well-to-do people acquire it. When that condition is changed and the gates of the school are thrown open to all, when every child has to go to school and has to pay the penalty for non-attendance, this ideal has to be changed. In these communities, knowledge has to be given for certain practical purpose. If the ideal is changed the whole system of the school-subjects in the class-room must be changed also. The boys should, henceforward, learn not to show off what they learnt but to make use of it. Knowledge should be a help-mate to creative instincts.

The third defect that we notice is that whatever is taught in the class-room has no reference to the real life of the people. In the rural schools, the boy is not getting knowledge of the life of the people that surround him, but of a distant life that he has never seen; he learns about the city life and luxuries of the city, about the railways and motor cars, the electric lights and telephones—things which he has not seen. He learns about the unknown objects and unknown places, wonders at them, and imagines the rest. The city becomes a fairy land to him and he secretly resolves to get a taste of this fairy land one day. If instead, the village boy learns to interpret the village life in terms of the knowledge he acquires, he will be quite a different man from what he is. He will then appreciate the beauties of the life he is living; the fields and the cattle and the people will not be to him just the ordinary things he sees, but will be known to him as forming part of a great scheme. The railways and motor cars will be studied as means of transporting the produce of the fields and not as things to be wondered at. The knowledge of the city life and luxuries will be acquired not as a description of a fairy land but as that of a centre where his field products are collected, where he will have to go often and where he will have to learn many things. Thus it will be that the village life will not be a life of drudgery and toil to the school-boy, but a life full of significance and worth living.

70. The defects mentioned above may appear small at the first glance; but the results of their collective effect are being experienced at present, in the migration of the rural population to cities, in the purposeless activities of the people and in the aversion towards manual work. The life of the child is lived in an environment which is constructed out of a grain of truth mixed with a bushel of imagination. The physical life, on the other hand, is lived in natural environment, whose true significance is never explained and whose abundant beauties, he is never taught to appreciate. The two lives are lived in entirely different surroundings and consequently as soon as the force of circumstances loosens its grip on the village boy, which keeps him attached to the soil, he goes out to the city to co-ordinate his mental life with the physical. The educational system is, therefore, leading us to danger. If it had only created a tendency to seek service, the evil would not have been great. But when it attracts away the energetic and intelligent men to the cities and to foreign countries leaving sluggards behind to take care of the villages, the State will do well to take stock of its own house. To wink the eyes at the evil will prove suicidal in the end.

Pernicious results of the present Education.

(B). Suggestions for the Future.

71. As a measure of the first importance, then, we should propose that the aim of education should be to train boys for some vocation in life. In rural areas, the vocations should be suitable to rural life while in urban areas they should suit the urban life. The second measure should be to effect a change in the treatment of subjects in the class-room so that an interest in the environment may be excited. Thirdly, subjects like Drawing, Sloyd and Manual Training which would train the hand may be introduced to relieve the excess of weight on the side of mental training. These subjects should form part of the curriculum from the lower primary school right to the end of the secondary school. For rural schools, we would suggest that if nature study be introduced as a subject and if the mental work be co-ordinated with the practical work in the shape of school-gardening, a much-felt want in the rural schools will be met in that it will make a beginning in teaching the most elementary work in agriculture on scientific basis.

Suggestions as regards Primary Education.

Another point we should like to urge is that the rural school-teacher should have his position defined and he should be trained so as to be able to fill that place. The rural school-teacher must be more than a mere school-master. He must guide and advise the people on various matters—social, industrial and economic. He is one of the few educated man in many villages and the only educated man in several small villages. As such, if properly trained, he will prove a great civilizing agent. We know of several instances in which the school-masters have done this ser-

vice to villages. Their attempts were, however, spasmodic. What we want is a well-planned, conscientious attempt, backed up by Government, on the part of school-teachers for such ameliorative reform which a civilized Government undertakes. The rural school-master, if trained for this purpose, can be of great help to Government in popularising measures of rural development and social improvements, organising Co-operative Societies, starting Village Libraries, improving Village Sanitation, effecting reforms in the methods of agriculture, and in many other things. What is wanted is a programme of village improvement, to train the teachers in social work and through him to introduce improvement. Occasional conventions of school-teachers and dissemination of information through magazines or leaflets will keep these teachers well-informed on these points.

A rural school-master is well-utilized in the United States of America.

72. In the United States of America and in Ireland the rural school-master has proved himself useful in many ways. He assumes the position of a leader of the village community and as such he not only helps and guides in private matters but becomes a strong social force in the community and establishes Institutions and agencies in the village so as to make the best use of all the help that the State or charitable endowments extend to villages. Thus in the United States of America, the various State Federal Departments publish bulletins of information regarding their activities which reach distant villages and are made use of by the people with the help of the school-master. In short, any new activity that is started finds a willing worker in the school-master for disseminating information amongst the villagers. Luckily for us, the Compulsory Education Act has already established such an agency. What is wanted is to make use of it to the fullest extent.

Suggestions as regards Secondary Education.

73. So far, we were treating of primary school education: how far it should be remodelled and to what extent it should be made to serve our purpose. It now remains to be seen with regard to the secondary education. The lower primary school will mind the instruction in the three R's only; the upper primary school will see to making a beginning and to creating a taste for the vocations. After this, there might be a bifurcation of studies, so that some who cannot afford to wait long may go to Technical Schools and fill up the posts as foremen in any vocation. But there may be others who would like to go in for Technical College studies. For these, secondary education will have to be provided in such a way that they may study the humanities for some time and during the rest of the time they may learn details of the vocation they have chosen. The curriculum of the secondary school may, therefore, be made elastic so that there may be some compulsory subjects while groups of optional subjects may also be provided for men going up for the vocations. After getting general principles guiding the vocations and insight into the technique of the vocation they may be ready to join the Technical

College where they will receive higher education and qualify themselves for some responsible posts. The details of the secondary Technical Schools and of the Technical College will be discussed at length at the proper place.

74. If we agree to the general scheme, as a first measure we would propose that the whole educational system should be divided into two main sections—one intended for the urban area and the other intended for the rural. The urban schools should pay attention to the training of boys for the handicrafts and the learned professions, while the rural schools should devote attention to agriculture and rural life. There will be a common curriculum for both the types of schools. The teaching of the three R's will be common to both the systems. In order to give a practical turn to the whole training some other studies such as Drawing, Manual Training and Nature Study will have to be made common to both. It is not possible to give technical instructions in any trade or agriculture in Primary Schools, the children would be too young to grasp the teaching. These studies may come after they have left the Fourth or the Fifth Standard; but before that, instructions could be given to the pupils suited to their surroundings. In the rural studies, the rural problems should be given predominance.* The text-books should give lessons from rural life; the Arithmetic, the Reading series, the Geography—all should set rural problems. They should also be shown agricultural operations as they may be going on all round.

It is true that the substitution of Agricultural Nature Study lessons for "General Knowledge" section in the Reading Series will be of some use to the boys but the change suggested is not adequate. By means of a few lessons, we cannot create love for rural life and professions. For that purpose, the entire system of studies must be changed. Arithmetic, Geography and such other subjects must

*A Committee was recently appointed by His Highness' Government to revise the curriculum of the Vernacular Schools. We have seen a copy of the Report. It appears from its reading that the sole attention of the Committee's inquiry was devoted to the revision of Readers whether there should be separate Readers for boys and girls and for urban and rural schools. So far as the rural schools are concerned the Committee's findings are as under:—

"We find, therefore, that what has been apparently an entirely satisfactory measure in the Central Provinces is considered to be unsound in Bombay. Possibly, the fact that industries are more to the fore in Bombay than in the Central Provinces may have had some influence in causing the former Government to decide that agriculture should be excluded from its rural schools. But we are inclined to recommend a course between the two. We suggest the introduction in rural schools of "Agricultural Nature Study" as a separate subject to take the place, in the curriculum, now taken by "General Knowledge." At present, this "General Knowledge" is taught by means of the third part of the Readers which contain scientific lessons which, for want of apparatus which we cannot afford to supply, cannot be properly taught.

The Committee, therefore, recommends the substitution of agriculture in the shape of appropriate nature study for the third part of the existing Readers, and the Department of Education will get a suitable text book in this subject, prepared if necessary by a Committee."

be so arranged as to fit in with the general object of the studies. Such books have been prepared in the United States of America and we cannot understand why they could not be prepared here. However, school gardens may be organised even for the Nature Study. At least, a beginning should be made in a few schools.

By means of school gardens the method of seed-testing, the application of manures—all in a general way may be shown. The manual training lessons may teach how to repair implements; while in the Urban Schools, topics related to urban life may be introduced. One interesting experiment is being made at Amreli where a special Primary School has been opened for the children of the school-going age of the artisans of the town. The school is registered under the Compulsory Education Act and the children besides receiving education in the three R's receive training either in carpentry, weaving or dyeing. The children have so far shown very good progress in their studies both general and practical—though the experiment cannot be called successful. It is very interesting and the Education Department is training teachers for similar schools to be started elsewhere. As we shall have to revert to this subject again later on, we would not say more on this here; but we would recommend that the experiment be well-conducted and under the best conditions.

75. In order to achieve this end, we would propose that special courses of studies should be prepared for both, and teachers should be specially trained to introduce them. For the teachers, there should be a distinct service. The rural teacher should undergo, besides pedagogy, a course of Manual Training, the general principles of agriculture and agricultural co-operation as well as the problems of rural life. The urban teacher should undergo a similar training; except in agriculture and rural problems; in its stead he should undergo a training in Municipal Life, and some one art or handicraft.

The rural and urban teachers should be specially trained.

76. The newly created Library Department has made an excellent beginning and we recommend that more funds should be granted to it and it should be further developed. Already, an increasing number of people are approached (152,318 in 1917-18) by the Visual Instruction Branch of the Department and the Cinema machines have proved to be of great value in the general education of the masses. More machines should, therefore, be provided and more lecturers and demonstrators should also be trained and engaged. In order to meet the expenses, in the beginning a small fee may be charged from the villages for demonstrations and we think the village people would be glad to pay them. In a few years, the work of the branch could be made self-supporting.

Visual instruction should be extended.

77. The Visual Instruction Branch itself is not interested in any one trade or industry or any other problem. Its films are selected from various topics—Agriculture, Industries, Sanitation, Education, etc. The lecturers are asked to deliver lectures on various subjects. In fact, it is doing work for various Departments of the State. Similar work has to be done by these Departments also. To prevent overlapping of work and to prevent waste in expense, we would propose that a permanent Committee be appointed consisting of the following officers who should select films, train the demonstrators in different branches of work and settle a programme of demonstrations in close co-operation with the Departments concerned.

**A permanent Committee
may be appointed to
select films.**

- (1) The Commissioner of Education.
- (2) The Curator of State Libraries.
- (3) The Registrar of Co-operative Societies.
- (4) The Director of Agriculture.
- (5) The Director of Commerce and Industries.
- (6) The Sanitary Commissioner.

This Committee would co-ordinate the activities of the various Departments and see that useful and practical work is done.

CHAPTER II.

Health and Sanitation.

(A) Preliminary Considerations.

78. The population of the Baroda State to-day is almost the same what it was in 1872, when the first Census was taken. In 1872, it was 1,997,598 and it reached the maximum in 1891 when it was recorded at 2,415,396. In 1901, owing to the Great Famine there was a heavy fall and the Census returns showed 1,952,692. In 1911, there was a slight rise of 80,106. The population in 1911 was 1.8 per cent. more than what it was in 1872. It does not appear that the Census of 1921 will show any rise. During the first seven years, Plague and Cholera have taken a heavy toll and the last year's Influenza Epidemic must have taken away, on a most conservative estimate, at least 5 per cent. of the population. The lowest known mortality was 3 per cent., while in some villages it ran up as high as 15 or even 20 per cent. The decrease in the population started with the historic famine of 1899 (Samvat 1956), when from 2 to 3 lacs died from famine, famine-fever and Cholera. Since then, Plague has been raging in most parts of the State at some one time or another.

79. These statistics clearly show that the vitality of the people must be very low so that they fall an easy prey to all sorts of diseases. Though the birth-rate is very high, the general average of life is very low. The general average of life is reduced because of the heavy infant mortality (45 per cent. among children below 5 years); but this also must be due to the same cause, though it may partly be attributed to the custom of early marriage, and partly to ignorance, and lack of proper nourishment.

80. In 1910, His Highness the Maharaja had appointed a Commission to inquire into the vitality of the people and suggest remedies. All the witnesses that came before it testified that the vitality of the people was going down and their physique deteriorating. However, no scientific proofs were available and the Commission did not give any definite opinion.

81. If we carefully examine the causes of the low vitality of the people, the following facts stand prominent:—

Under-feeding of the People.

- I. The income of the people is low; and
- II. they live in insanitary surroundings.

We have already seen that the average income of the people of the State is Rs. 45 per head. It is impossible that a man can maintain his physical efficiency with that amount. When we talk of an average it must certainly mean that there must be a large number whose income must fall below this figure. To them life must be a perpetual period of starvation or under-feeding. Whether the people of the Baroda State get sufficient food or not was inquired into by Mr. Nanavati in his Report on the Agricultural Indebtedness in the Baroda State. From the export and import as well as crop statistics for the year 1907-08, 1908-09 and 1909-10 it was found out that the food available during the three years per head of population was 9.49 maunds per year while the minimum required as determined by the Famine Commission of 1878 was 10.46 maunds per head (for man only). Unfortunately, statistics for other years are not available but it is doubtful if they could have shown a better result. This under-feeding is still going on. With a low income, the standard of life and living must be low and this must create insanitary surroundings which must further react and bring about low economic conditions.

82. The sanitary condition of the people is extremely unsatisfactory. We will first take the villages and then the towns and cities.

Village and Town Sanitation.

(B). Village Sanitation.

83. Village Sanitation is extremely defective. All the houses in the villages are closely crowded up—except in the Amreli District and the Rani Mahals of the Naosari District. They are ill-ventilated; they do not have windows at the back or on the side-walls. Inside, they are dark and in some of the houses, even during noon-time it is difficult to see without lamp light. There are no outlets or chimneys for smoke. In many places, men and cattle live together and the whole house is full of filth. These houses were designed two or three hundred years back when life and property was insecure and bands of robbers were roaming about. Even though the times have changed and life and property are secure the old habits have continued.

The Houses lack in necessary Ventilation.

84. Outside the houses in the village itself there are no good roads nor is there any conservancy arrangement. Every village has on its servants staff a few sweepers (Bhangis), but they are mostly used as messengers and labourers.

No Sweeper Service. Water supply is defective.

They sweep the streets only at long intervals. One other nuisance is that of manure pits which are situated too near the dwelling

houses. Thanks to the liberal grant given at the time of His Highness' Silver Jubilee that a number of wells to supply drinking water have been provided in several villages; but the water-supply in many villages is still very defective—especially for the Antyaja population. The newly established Mahal Panchayats are helping the people by providing wells and occasionally cleaning them out; still there are several villages where water supply is not ample and pure.

85. In almost every village, there are a number of small pits round about the village site, and all over the railway lines there are a number of borrow pits where storm water stagnates and breeds mosquitoes which spread Malaria all over the country. Just about the time the Kharif harvest has to be gathered in October and November a large number of population is always down with fever which sometimes rages so high that the cultivators as well as their labourers are unable to work and the crop is ruined.

The People are tormented by Malaria and Mosquitoes in October and November.

86. During epidemics, no medical help is available. No special agency has been yet created to deal with them. Even in ordinary times, no medical aid is available except at Head Quarters of the Talukas. As a rule, the villages are dirty and ugly in appearance and in several places with a number of tumbled down houses in all stages of progress, serving as a breeding place for mosquitoes and reptiles. Cactus and other bushes close to the houses are a nuisance and accommodate all sorts of filth. In fact, it may safely be said that village sanitation has been neglected and there is nothing like sanitary service.

No Medical help available. Village Sanitation is neglected.

(C) Town Sanitation.

87. When we come to examine the conditions in the towns and cities, we do meet with slightly better conditions. All the towns have Vishishta Panchayats or Municipalities and they are expected to look after their sanitation. Though their work is not perfect, they render a great service in sanitary matters. Roads are swept and filth is removed to a safe distance. Water supply is also looked after. Arrangements have been made for Water Works at Pattan, Kathore, Sinore, Bhadran and Sojitra. Surveys have been completed for the same at Sidhpur, Naosari, Mehsana, Vyara, Visnagar and Amreli. A drainage scheme has been prepared for Bhadran. Schemes for town-planning have been prepared for Baroda, Naosari, Petlad, Sinore, Kathore, Mehsana, Kalol, Nar, Vyara and Songhad; though much is done, the sanitary service is still defective and requires much improvement. Houses in the city are ill-ventilated and in many places are very crowded.

Better Conditions are found in Towns.

88. Almost all the towns have dispensaries. There are 60 Hospitals and Dispensaries, Hospitals and Dispensaries in the State and their maintenance expenses. maintained at a cost of Rs. 3,58,987.

89. Though an agency has been created for sanitary improvements in the towns, still the service is not effective. There are numerous improvements still necessary. Sanitary Service is not effective. Improvements are necessary.

(D) Steps taken by the State.

90. Now, let us examine the various steps taken by the State to improve the Sanitary condition of the towns and villages. Various steps taken by the State to improve the Sanitary condition.

91. Prior to 1881, when His Highness the Maharaja took charge of the affairs of the State there did not exist any Government sanitary service except in the City of Baroda where roads were constructed and watered and filth removed at State cost. The other towns and villages made their own arrangements and anyhow managed as best as they could. Every town and village had its band of sweepers, who performed such service as the people demanded of them. Sanitary condition before 1881.

92. In 1892, the Municipal Act was passed and Municipalities were created, but the expenses of management were paid by Government. In 1905, the Municipalities were permitted to tax themselves and manage their own affairs. Under the present Act, there are 10 Municipalities and 32 Vishishta Panchayats with an aggregate income of Rs. 9,44,070. Passing of the Municipal Act. The number of Municipalities and Vishishta Panchayats and their income.

93. For the village areas, Village Panchayats were established in 1903 and there were in 1917-18, 2,319 such Panchayats working in the State. Besides the Judicial and Police functions assigned to them they are expected to look after village sanitation and the prevention of epidemics. Though a working machinery has been created to look after rural sanitation, for want of funds and for want of a staff to train the local leaders, even the simplest sanitary needs are neglected. Establishment of Village Panchayats—a working machinery.

94. Besides the Municipalities and the Panchayats, a Sanitary Department has been created since 1891 and a Sanitary Code prepared for its guidance. The Sanitary Department consists of— Creation of the Sanitary Department.

- (1) Administrative Agency;
- (2) Executive Agency; and
- (3) Subordinate Agency.

95. The Administrative Agency consists of the Head of the Department, whoever may be appointed, and the Sanitary Commissioner as his assistant. The Executive Agency consists of the Municipalities and the Vishishta and Village Panchayats. The subordinate staff consist of four District Sanitary and Vaccination Inspectors and a number of Taluka Vaccinators.

96. The Sanitary Commissioner is a purely Advisory Officer. He has to visit towns and villages and advise the local authorities on sanitation. He has no authority over them nor has he any staff of his own to carry out improvements where necessary.

97. The present work of the Sanitary Department is confined to

- (a) the inspection of the birth and death registers in towns and villages;
- (b) supervision over the work done by the Vaccinators; and
- (c) the inspection of the towns and villages and the rendering of such advice as is possible.

98. The executive work, as stated above, is carried out by the Municipalities and the Panchayats.

99. The total expenditure of the Sanitary Department comes to Rs. 11,036-3-5 (1917-18).

100. Besides the creation of the Department, Rules for the Regulation of Public Health (Arogya Rakshan Niyam) have been passed (1901) which lay down minute observations to be followed by the people. These are applied to 30 villages and the Revenue Circle Inspectors are expected to see to their execution. The only important work done in the villages under these rules is the isolation of the manure-pits (*Ukardas*) in some of the villages. In other respects, the work is inefficient.

101. In 1910, a Commission was appointed by His Highness the Maharaja Saheb to inquire as to "(1) whether the physical condition of the different classes of his subjects is improving or deteriorating; (2) whether they get sufficient and nutritious food; and (3) whether it would be advisable to introduce a new kind of food and if so, what it should be". By a subsequent order "the Commission was asked to investigate the whole problem of the vitality of the people". It was further ordered that

"The legitimate objects which the investigation should serve are:—

- (1) The prolongation of the average duration of life, and the decrease of the comparatively high death-rate which at present prevails.

- (2) The conservation of the physical energy of the people which may lead to a corresponding increase in their working capacity.

“In pursuing their investigation, His Highness wishes the following subjects to be studied:—

- (1) The prevalence of Disease in the State—
(a) Infectious and contagious disease.
(b) Serious illness arising from other causes either of hereditary or of environment.
(c) Minor ailments which may be reduced with care.

“In all cases, practical recommendations should be submitted, having special relation to the conditions of life in the East.

- (2) The Birth and Death-rates of the State—
(a) Adult and infant mortality; the proportion between the number of deaths.
(b) The number of deaths due to (1) infectious disease; (2) other illness; (3) accidents; and (4) old age.
(c) The difference between the death-rate in Urban and Rural districts.
(d) Difference between the death-rate among the poor and the well-to-do.

In this connection His Highness especially wishes to learn the particular causes which resulted in depopulation during the famine year, amounting to one-fifth of the entire population. He suggests that it should be ascertained how far this decrease was due to—

- (1) Cases of actual starvation.
(2) Attendant disease.
(3) Possible migration.

“In this inquiry, reference will probably have to be made to statistics drawn up in British India where the same causes must have been operative.

The conditions of life in the Home: their bearing upon the general health of the Community.”

102. The Vitality Commission made a special enquiry except of the fact of the deterioration of the physique of the people, for which no data were available and investigated the whole problem of health and disease and submitted a number of recommendations, a summary of which is given in Appendix X.

Enquiry and the Investigation made by the Vitality Commission.

103. A part of the recommendations made are carried out but a major portion still remains unattended to. Many recommendations are not still attended to. A list of the recommendations carried out and partly carried out by the Sanitary Department is given in Appendix XI.

104. For the treatment of diseases, a Medical Department was organised in 1876-77. It has now 60 Hospitals and Dispensaries. 453,668 patients were treated in 1917-18. A scheme for the extension of medical relief in the State is under consideration. For treatment of Malaria, an increasing grant is given for free distribution of quinine in villages. In 1917-18, Rs. 3,000 were sanctioned for the purpose.

105. A course of Home Hygiene has been introduced in the higher standards of the Primary Schools and lectures in the same subjects are being delivered in a few towns.

106. These activities have no doubt produced some good effect. It will be noticed from the following figures that the rate of mortality has gone down to some extent. To-day the mortality rate in the Baroda State is the least in India excepting that of the Madras Presidency. However, the death-rate is yet comparatively high, specially when we compare the statistics in Europe and America, and it must be the endeavour of the State to reduce it still further.

Year.	Total Deaths.	Ratio.
1	2	3
1901-02	57,898	29.6
1902-03	61,718	31.6
1903-04	64,892	33.2
1904-05	48,227	24.7
1905-06	46,221	23.7
1906-07	64,112	32.8
1907-08	47,730	24.4
1908-09	42,703	21.9
1909-10	44,536	22.8
1910-11	50,531	24.9
1911-12	45,850	22.6
1912-13	52,660	25.9
1913-14	50,552	24.9
1914-15	46,317	22.0
1915-16	47,582	23.4
1916-17	54,205	26.7
1917-18	81,188	39.9

107. From this discussion, it will be seen (1) that some arrangements are made for sanitary improvements of the towns;

(2) that no satisfactory arrangement is made for village-sanitation; the agency of Village Panchayat has not undertaken any work;

- (3) that no agency has been created to deal with epidemics—agency that might automatically be put in motion—when any epidemic breaks forth;
- (4) that no medical aid has been provided for the village people near their homes;
- (5) that the Sanitary Department of the State is the most neglected Department and it is the least equipped to deal with the tremendous problem of sanitation; that the State expenditure on sanitary improvements of the people is very insignificant; and
- (6) that no adequate steps have been taken for teaching people Home and Personal Hygiene except in a few towns.

(E). Ways and Means.

108. Under the existing organisation, the executive work for sanitation has been entrusted to local authorities—to the Municipalities and the Panchayats. The Municipalities and the Vishishta Panchayats raise their own funds for sanitary service but the villages had till recently no special funds of their own except the contribution they may receive from the Taluka Panchayat out of the Local Cess, for any special work such as the construction or the repair of a well or Chowra; Government have assigned to them some local incomes such as the proceeds of fruit trees on waste lands etc., and have also empowered them to impose Local Cesses with the sanction of Government. When full advantage is taken of these concessions, Village Panchayats will have the necessary funds to carry out the necessary sanitary arrangements.

109. Since the executive work has been delegated to the local authorities the function of the Central Government and of the Sanitary Department which is the Administrative Department in such matters is purely advisory. With limited funds at their disposal, the local authorities are not in a position to fully carry out the recommendations of the Sanitary Commissioner. It is not the lack of ideas or the agency that come in the way but the lack of funds. When we consider this problem, three different ways suggest to us:—

- (1) The levy of extra taxes;
- (2) The contribution from the State; and
- (3) The contribution of personal labour of the people themselves.

We will consider all these methods and see how far they are practical.

(1). Levy of Extra Taxes.

110. For the ordinary expenses of sanitary work, it is quite reasonable that the locality benefitted should raise its own funds. But in order that it may do so, some sort of encouragement and help is necessary. In order that the village people may take the benefit of self-taxation, the State should announce the policy of grant-in-aid in co-operation with the Local Boards as is done in the case of libraries—that is, when a village is willing to raise Rs. 100 by means of a special sanitary cess a like contribution may be given by the Local Boards as well as by the State. The village contribution may be made in cash or in labour. In this way, if proper propagandist work is done by the Sanitary Department, a number of villages may be found to raise funds.

Levy of extra taxes would be burdensome.

111. Government should place a decent amount with the Sanitary Commissioner for the purpose and the Local Boards also should be requested to set apart a like sum. Rules may be made indicating the line of work to be undertaken out of this fund and proper supervision should also be kept by the Sanitary Department that the money is spent for the object specified in the grant. We think that by this method most of the villages may be induced to make a few improvements.

Government and the Local Boards should set apart equal sums for sanitary purposes.

(2). Contribution from the State.

112. Besides the sum set apart for the contribution as mentioned above the State should undertake all the expenses of combating epidemics. At present, the duty has been entrusted to local authorities, though in special cases, the State does take special measures. As we have seen before, the local authorities except the large Municipalities have not enough funds to carry out their ordinary sanitary work and therefore, they could not be expected to take all the necessary measures in case of epidemics; with the result that when epidemics break forth there are hundreds of villages that do not receive any help. Therefore, we propose that the treatment of epidemics should be recognised as the State's function. The co-operation and where possible, monetary help may be demanded from the local authorities and their agency may be fully utilized; but the State should supply the superior staff and extra expenses. By the adoption of this policy, better work would be done and hundreds of lives would be saved that are being lost without any medical aid. For this purpose, a large sum should be placed at the disposal of the Sanitary Department which should be permitted to engage temporary medical and other staff when required.

The Government should place a large sum with the Sanitary Department to meet the epidemics.

113. At the same time, the sweeper service in the villages should be improved. At present, the State pays Rs. 1-12-0 per head to the Bhangis and maintains a few in every village. These people do get some remuneration from the village people in the form of cooked food and clothing, but on the whole, they are badly provided for and do not devote their whole time to village work with the result that the work is badly done. In place of the present arrangement, we would propose that the amount now spent by the State on village Bhangi staff, should be handed over to the village Panchayats and from their own income and grant recommended (in para 144), they be required to engage a well-paid and full-time Bhangi staff.

The State should maintain well-paid Bhangis in the villages.

(3) Contribution of Personal Labour of the People.

114. Where people cannot pay in cash, they can contribute in their own labour. In a poor country where all the necessary funds could not be raised by means of cesses or taxes, the people must contribute their own labour, for such improvements as are possible. The village people cannot sweep public roads (for which needful staff must be paid for), but they can clean roads in front of their houses; they can repair village roads, fill up pools of water, clear useless bushes and hedges, clear up dilapidated houses, repair village wells and tanks and carry out many other works of public utility. As a matter of fact, in the old days when the Central Government did not interfere in the village administration the village community was expected to carry out its own village work and most of the improvements were made by the people themselves. But since the assumption of all the administrative functions by the State, this old practice in most of the villages has been suspended and the people always expect the Government to carry out even the most unimportant improvements. This mischief, therefore, must be remedied; and the civic conscience of the people must be aroused and they should be taught to be self-reliant in all matters of local improvements. Even in advanced countries like America, this method of doing public work, such as the construction of State roads, has been introduced and every citizen cheerfully gives his own labour or its equivalent in cash. In India, in the Mysore State, this system is being tried and its results may be watched with interest. In order to carry out this suggestion, a schedule of works to be done by the public themselves should be prepared for villages and the people may be persuaded to carry them out. If the people are made to take interest in the improvement of their own surroundings and if they once realise the benefits, they may be trusted to carry it out afterwards without any external help.

Contribution of personal labour by the people is necessary.

(F). Recommendations.

115. Therefore, the Government should place some more money at the disposal of the Sanitary Department and should provide well-trained staff to carry out State-wide programme of sanitary propaganda. Any money spent for this work will repay in increased vitality of the people and the consequent economic gain.

More money should be placed with the Sanitary Department by the Government.

116. Besides the provision of additional funds and the adoption of a sanitary propaganda, we would suggest some more measures to be adopted:

Other recommendations.

- (1) In some of the villages the houses are very much crowded, the village-site being very small. Rules have been made for the extension of the *Gamthan* but it becomes very difficult to acquire land for the purpose. It is the duty of the State to provide land for building houses and it should see that the population gets the land easily. Therefore, some easy procedure should be found out. We propose that a Committee of 5—(1) the Suba, (2) the Executive Engineer, (3) the Sanitary Commissioner and (4-5) two leaders from the village—should be appointed to deal with proposals regarding the extension of village sites. All applications for the extension of the *Gamthan* should be entrusted to it and its decision should be final. Unless some such Committee is appointed, it is not likely that these rules will be given effect to.
- (2) A few model villages in different localities should be constructed to serve as object lessons. When new hamlets are to be built, plans should be supplied by the Sanitary Department. Recently a special Town Planning Officer has been appointed in the Panchayat Department which is a step in the right direction.
- (3) Special attention should be paid to Personal and Domestic Hygiene. The houses in the villages are very badly constructed. The people themselves are hopelessly ignorant of even the rudiments of hygiene. There is a heavy mortality among the children below five. To remove the ignorance and to teach the people the more hygienic methods of living, sustained propagandist work should be done and an adequate but well-trained staff should be given to the Sanitary Department. Trained Nurses and Midwives should be provided and arrangements should be made to train the local *Dais*.
- (4) The existing arrangements for medical relief are inadequate and more dispensaries should be opened in all the larger and central villages. We understand

that proposals are before Government for the provision of some more dispensaries and we hope that they will be provided in larger numbers.

- (5) The Sanitary Department should be strengthened and more staff and funds should be given to it to carry out the improvements mentioned above. It must also be ready to do some work itself by way of demonstration, by the organisation of a "clearing up day" and such other measures. It must organise exhibitions, demonstrations, lectures and publish literature—efforts directed towards the awakening of the sanitary conscience of the people and the training of the local leaders to carry out the work with the State aid.

117. The sanitary and medical problem is of such a great magnitude that no efforts could be considered as too much. If the people were only taught and were made to carry out the instructions given in the excellent "Arogya Rakshana Niyam" prepared by the State for villages, Baroda villages would be models of cleanliness.

Every effort should be made to meet the sanitary and medical problem of the State.

CHAPTER III.

AGRICULTURE.

(A). Preliminary Considerations.

118. In the preceding two chapters we have discussed two important subjects of Education and Sanitation. As mentioned before, the education of the masses and the sanitary improvement of their living are prerequisites for a steady and comprehensive economic development. Now we shall take up all the important economic problems beginning with agriculture, which is the most important industry in the State. In this chapter, we propose to discuss Agriculture under two heads:—(1) Agriculture as an industry and (2) Agriculture as a mode of life. The life of the rural population is dependent upon agriculture as an industry; and the mode of living and the problems connected therewith are of such importance that they require special consideration. Rural, social and administrative problems are by their very nature peculiar and should be studied in their various aspects.

119. During the last 60 years, momentous changes have been going on in the agricultural industry of the State. When we study the economic history of the State we come across four distinct stages in the progress of agriculture. The first was the period before the reign of His Highness the Maharaja Khanderao. Before 1856, the agricultural population of the State was comparatively small and the land available for cultivation was abundant. The administration of the Talukas was entrusted to Revenue Farmers and the villages paid their taxes to the State in a lump sum or in kind. There was perfect village autonomy and the State interference in the village affairs was non-existent. There were no railways and the crops were raised to meet the immediate needs of the population. With the exception of the occasional misrule of the *Kamavisdars* (Revenue Farmers) and the political disturbance, the villages lived their own self-contained life.

120. The second period began in 1856, with the rule of His Highness the Maharaja Khanderao and ended with 1898, the date of the historic famine of the last century. It was a period of progress. The system of Revenue Farmers was abolished and in its stead the Ryotwari system of land assessment and holdings was organised. With the establishment of law and order and with the abundance and regularity of rainfall, the population increased and

prospered. The State also took various measures to help the people. Railways were opened, roads were built, water courses to drain off excess waters were constructed, educational institutions were opened—in fact, all that was possible to be done by a civilized Government during the period of construction and organization was commenced—and the end of the last century found the people in a fairly prosperous condition.

121. The third period began with the historic famine of 1899.

The third—Famine Period. It was countrywide and it extended in its scope nearly to the whole of India. It came at a time when the people and the State were the least prepared. The years between 1878 and 1898 were so good that the warnings given to the country by the Famine Commission of 1878 were neglected and the great famine found both the people and the State the least ready to meet it, with the result that the State lost about one-fifth of its population and a large number of cattle and other properties. During the years that followed till 1912, there were a few famines but not very acute. Both the people and the State learned great lessons. The extravagance of the people born of the old prosperous days was checked and they learned to be thrifty though the huge debts incurred during the previous period hung round their neck like a mill-stone. No special progress in agriculture was made during this period which may be characterised as the famine period. The result appeared in the period that followed.

122. The last period began from 1912. Since then, the rain-

The last period. Progress. fall has been abundant and the seasons, on the whole, fairly good. There was one small famine in 1915-16 but it was very mild and local. The recent famine of 1918-19, though its results are not yet accurately estimated, operated throughout this State as also over a large part of India. The acute scarcity of rains had a marked influence on the prices of food and fodder, and both men and cattle suffered. On the whole, however, during this period the people partly regained what they had lost previously. They increased their holdings of land and their stock of cattle; the values of land went high and on account of the War they realised good prices for their crops. During the previous periods, certain changes in the types of agriculture were observed. The crops were raised not to meet the domestic needs of the family but to meet the requirements of the far-off market—that is, more and more commercial crops were raised and this tendency got a great stimulus from the War when cotton prices soared high and consequently the extension of cotton cultivation spread rapidly; this tendency had developed so much that when owing to the scarcity of food-stuffs in 1918, the State offered bounties for the increase in the area under food-stuffs, no adequate response came from the people. The period may be called the period of commercialised agriculture. The type of agriculture was and is rapidly changing. More and more commercial crops such as cotton are cultivated. The dairies that supplied the local needs are supplying butter and cattle for a distant market. Now the people have to depend more and more on outside markets for

their food-stuffs and consequently their habits and their mode of life have been undergoing a rapid change. Labour has been made more mobile and it is rapidly getting scarce everywhere. Labour-saving appliances such as oil-engines and pumps have been introduced but their number is still small. A land hunger has been created and all the available cultivable waste has been taken up and cultivated with cotton. Co-operative Credit Societies have been started to finance agriculture but their number is still small and their resources limited. Among the people themselves, a spirit of self-reliance is growing and they show a readiness to introduce improvements in agriculture provided they are well-considered and of a sure value. In fact, we have come at a stage when further improvements are now possible provided the State machinery is readjusted to meet the new requirements.

We will now examine the whole question of agriculture in some detail and suggest future line of work that may be possible to be carried out for its further development.

(B) Technical or Scientific Improvements in Agriculture.

123. During the last thirty years, various steps were taken
Improvements made during by the State to improve the agriculture of
the last thirty years. the State on scientific lines.

The early efforts were confined to the teaching of agriculture in special and ordinary schools. In 1886-87, a special Agricultural Vernacular School was started in Baroda and in 1890, a class for training students for the Bombay University was opened in the Baroda College. Besides these, courses in Agriculture were introduced in the Kala-Bhavan and the Male Training College for Teachers as well as in the Dhanka Boarding Schools in the Naosari District. All these schools were provided with small farms; but the students trained in the Schools and the Colleges instead of following agriculture as a profession, sought Government service and thus the object of opening them was not realised. They were, therefore, closed one after another in a few years. Later on, however, in about 1904, courses in agriculture were introduced in the Male Training College for Teachers and in the Patel Boarding School at Amreli; but they, too, did not achieve any better result and had to be abolished. In 1916, a special school for the training of the boys of the farmers was opened at Jagudan and later on transferred to Baroda; but the school had to be closed as it failed to attract sufficient number of students. The training in all these schools was not based on local conditions but was more of an academic nature and the students trained therein were not induced to follow agriculture. Most of them joined the schools with the object of securing Government service which was easily obtainable.

124 Simultaneously with the educational schemes, the Government also adopted several measures for effecting improvements by direct methods. Students were sent to England to be trained in the Royal College of Agriculture at Cirencester and they were placed in charge of the farms and the Department on their return. During this period of twenty years, between 1887-1907, the Officer in charge of the Department had several other duties to perform—he was at one time in charge of seven Departments as Assistant to the Sar Suba and had to perform his duties under great difficulties. However, some experimental work was done. It was mostly influenced by the line of action taken by the British Government in India. The prevailing idea of the time seemed to be the wholesale introduction of everything foreign, farm machinery, varieties of crops and methods of agriculture, without adequate study of local conditions and their suitability to meet local requirements. Efforts were made to introduce exotic varieties of cotton, tobacco and sugar-cane, to extend the cultivation of wheat, tobacco, indigo, safflower, potatoes, mulberry and Indian fruit trees; trials were made with artificial manures on dry and irrigated crops, attempts were made to introduce iron ploughs, reapers, cane crushers, winnowers, steam ploughs and other costly and heavy machinery and experiments were made regarding tobacco-curing, cheese-making and the breeding of Australian sheep. All these measures were spasmodic and did not produce any tangible results.

125. In 1899, the great famine came and the necessity for taking some more serious steps to improve agriculture was increasingly felt. Between 1900 and 1904, various measures were taken by the Government of India to reorganise their Department of Agriculture and several experts in Agricultural Chemistry, Economic Botany, Mycology and Entomology were engaged. An Imperial Research Institute was founded at Pusa and Provincial Departments of Agriculture were similarly reconstructed. To co-ordinate their activities and to carry out a well-considered policy for the whole of India, the Office of the Inspector-General of Agriculture was created in the Government of India.

126. Ready to follow, as far as possible, the activities in British India, Baroda saw the necessity of reorganising its Agriculture Department and in 1909 the Agriculture Department, which was hitherto considered as a temporary Office in the Revenue Department, was given the status of a Department and a full time Director was appointed in charge of it. To guide and regulate the activities of the Department the following order was passed:—

“The State being comparatively a small one offering a limited scope for working out a large scheme of scientific work the best course would be to watch the results obtained at the British Institutions and particularly at those located in our immediate

neighbourhood and to try to demonstrate such improvements of proved value to the people of the Raj."

The Department was placed directly under the Dewan for the reason that the Agricultural interests should receive close attention from the Head of the Administration. As can be readily seen, the above policy was dictated by the failure of the work of the preceding two decades. Later on, to fully carry out the policy laid down, arrangement was made for the periodical visits to the Baroda Farm by the Officers of the Imperial and Provincial Departments of Agriculture in British India. From 1908 to 1912, some work of secondary importance was done. The Department had no expert or District staff and was not expected to carry out any special research.

From 1909 to 1912, the Department continued to make some experiments on the Baroda and Jagudan farms. They were either the duplication or the repetition of those carried on on the British Indian farms. Various experiments with indigenous and exotic varieties of cotton, tobacco, ground-nuts, wheat and some garden crops were made. Besides these, experiments in artificial, green, farm yard and village waste manures and in tillage with iron ploughs, harrows and various other implements were also tried. Honorary correspondents were appointed and special encouragements were given for the supply of improved implements below cost. But all these, excepting those of ground-nut, green manuring and iron ploughs, did not give the desired results.

127. It was in 1912 that a new spirit came over the Department. Dewan Bahadur V. M. Samarth rejoined Baroda service as Amatya in that year and assumed charge of the Commerce, Agriculture and Co-operative Departments,

The Department came in close touch with farmers between 1912 and 1915.

besides the Revenue and other Departments. His wide experience of the State, his great administrative abilities and his keen desire for the Economic Development of the State all contributed towards the foundation of a new and a progressive policy in the Department. The officers of the Revenue Department and the District Boards also full heartedly co-operated with the Agricultural Department in its efforts to introduce improvements in agriculture. Our colleague Rao Bahadur Govindbhai H. Desai; as Suba of the Kadi District, set an excellent example for imitation in other Districts by whole heartedly associating with the Director of Agriculture in his efforts for agricultural improvements. An Agricultural Association with over 1,200 members was first formed in the Kadi District, and subsequently in the Baroda District. The Kadi District Local Board was persuaded to set apart a small sum for helping cattle shows in each Taluka. Agricultural shows were held and the benefits of improved implements practically demonstrated at Jagudan and other places. The novel idea of a moving Agricultural Demonstration was conceived by the Kadi Suba and put into effect in 1914. A wagon was hired from the B. B. and C. I. Railway at concession rates on the condition that it should be detached at each station in

the Kadi District and allowed to be detained for twenty-four hours. This interval was used in arranging in the form of an exhibition, the implements, samples of seeds, etc., with which the wagon was loaded. Lectures were given by Revenue Officers and Inspectors of the Agricultural Department, and the practical use of the implements was demonstrated in the nearest field. Thousands of cultivators from the neighbouring villages to whom intimation of the time and date of the arrival of the wagon had been previously given, came and benefitted by the show. Extra implements were kept in stock and sold on the spot at half the cost price to those who wanted to purchase them. Leaflets and pamphlets on various subjects such as the advantages of raising lucerne fodder, improving cattle breeding, enlarging holdings, etc., were published and freely distributed both by the Kadi District Panchayat and the Agriculture Department. In the whole period of the existence of the Agriculture Department, there was never a time when it came in such close contact with the farmers as it did between 1912 and 1915. No better co-operation could have been desired.

128. As a result, several important improvements were introduced. Boring work of the Department was extended and nearly 400 wells were bored in a few years, but its further development was checked by the confusion in the accounts of the stores and Government advances. About 500 iron ploughs were introduced and have by now established their usefulness. Specially selected seeds of Surati cotton and dry varieties of ground-nuts were extensively introduced. Poona and Mauritius varieties of sugar-cane and improved method of boiling cane-juice by the Poona process were also made popular. Superior varieties of rice and seedlings of fruit-trees were distributed in Kadi and Baroda Districts. A large amount was given as Tagavi to instal pumps and oil-engines for irrigation. In fact, good substantial work was done towards popularising improved methods in agriculture.

129. The enthusiasm that was thus kindled did not last long. The Agriculture Department underwent a good shaking after its Huzur Inspection which disclosed several office and account irregularities, and necessitated several transfers and changes in the Department. The zeal of the District Local Boards for Agricultural improvements soon vanished. The membership of the Agricultural Associations declined from year to year and now it is only nominal. No cattle-shows are held any longer; leaflets and pamphlets are no longer issued to any remarkable extent.

130: The Department has now the following staff:—

	1	Director.
The present staff of the Department.	1	Deputy Director.
	1	Senior Agricultural Inspector.
	4	District Agricultural Inspectors.

- 1 Sub-inspector for Dwarka (sanctioned this year).
- 1 Khedut-fieldman for Dabhoi Wadhvana Tank, (temporary).
- 2 Khedut sugar-cane fieldmen newly sanctioned—one for Kodinar and one for Vyara.
- 1 Superintendent of Entomology.
- 7 Veterinary Surgeons, one in each of the District Head Quarters, one in Pattan, one in Vyara and one in Bhadran.
- 1 Relieving Surgeon—vacant.
- 2 Officers in charge of Veterinary Hospitals at Kathor and Dabhoi which are sanctioned but not opened yet.

131. Department has now two Experimental and Demonstration farms at Baroda and Jagudan. The sub-farm for Dabhoi now sanctioned for five years is to be opened in 1920.

Experimental and Demonstration Farms.

132. The present activities of the Department appear to us to be more of a theoretic than practical nature. It is reported to us that the problems taken up are improvements in the indigenous varieties of staple crops of cotton, *bajri*, wheat and fodders, economic use of farm yard and green manures and their substitutes in dry and wet cultivation, tillage experiments with reference to soil preparation and conservation of moisture and rotation of crops and improvements in implements for increasing their efficiency. The suitability of improvements already recommended by the State and other Departments in British India are also studied in relation to local farm economy and questions of farm organisation, such as the profitable proportion and combination of crops, conflict of labour in operations, size of farm and cropping, profitable use of oil-engines, etc., are also undertaken. Where Government farms do not exist at present, experiments of a minor nature like the use of implements, trial of seed or manure—not involving any risk—are tried in co-operation with enthusiastic and willing cultivators.

Line of work of the Department.

133. The District work is confined to the demonstration of the use of implements and processes of proved value and the distribution of seeds of superior strains of cotton. It is early to judge of its results, but we have no doubt that if worked properly these activities would have good results. We find that the former method of giving lectures and holding occasional shows, demonstrations and exhibitions is given up. In its place a new system of giving the District Inspectors a few implements and asking them to move about from village to village and actually work on cultivators' fields has been introduced, but there are no results before us from which we can say that it has had better results.

District work of the Department.

134. A system of giving trained *Kheduts* to work with the cultivators and show and teach them improvements on definite points has first been tried in the villages on the Wadhvana tank and it has given good results in introducing irrigated crops and sanction for entertaining two more such *Kheduts* for Vyara and Okhamandal has been recently granted.

The system of giving trained Kheduts to work with the cultivators.

135. In reply to our inquiry as to why Agricultural Associations are allowed to remain in dormant conditions we were informed that small village group associations for binding together the enthusiastic cultivators of a few adjoining villages are being developed in their stead. It is said in their favour that they remain in touch with the Department and majority of the members take interest in improvement work. It is intended to ultimately work up these associations and through them reorganise the Taluka and District Associations. This will take a few years but the new organisation, it is claimed, will rest on sound basis. Most of us are unable to agree with this view of the Department. We have not seen any strong village association of this kind anywhere in the State. If there are any, their number must be limited. The previous idea of Agricultural Associations was not inconsistent with village associations. The rules formed for Agricultural Associations provided for Village, Taluka, and District Associations had worked well. The Department should have continued and further developed them instead of neglecting and allowing them to die out.

136. The Veterinary work is confined mainly to stationary hospitals. The Government has accepted the principle of opening two new hospitals every year in co-operation with the Local Boards. Besides five Government hospitals, two Government Local Board hospitals are opened, two more are sanctioned and three more are proposed to be opened. The existing dispensaries do not reach the outlying villages and the trial of a moving dispensary in Kodinar is proposed.

Veterinary work.

137. The Department has undertaken to supply free of cost bulls and he-buffaloes for free use of cultivators on the Local Boards undertaking to maintain them. A air stallion he-buffalœ is maintained at the Baroda farm and a stallion at the Pattan Veterinary Dispensary. The last undertaking has proved very popular and the necessity for an additional stallion is now felt and is being asked for.

Cattle-breeding.

138. The entomological work is confined mostly to demonstration on cultivators' fields of methods of proved value for checking and exterminating insect pests. Entomology is still in its early investigation stage and there is not yet much to demonstrate to the cultivators in this line.

Entomology.

139. The Boring Branch has just been revived from its dormant stage and has started its work with fresh vigour. Tagavi is granted through the Department for setting up oil-engines and pumps. It is neces-

Well-boring.

sary to place the boring section under a competent Mechanical Engineer. The recent Huzur Order appointing a Mechanical Engineer is in the right direction.

140. Before we proceed with any further discussion, we should like to summarise the causes of the failure of the Department to achieve the results expected of it; for, all future efforts should be guided by the previous experiences and we must see that the mistakes are not repeated.

Summary of the causes of the partial failure.

141. The causes of the failure may be summarised as under:—

- (a) The early efforts were based on an idea that Gujarat agriculture was wholly defective and to improve it foreign methods were necessary; and accordingly, attempts were made to introduce foreign crops and machines instead of improving the local methods and practices where defective.
- (b) In all the improvements, the study of the local conditions was neglected or was not properly attended to.
- (c) There was no continuity of policy.
- (d) All efforts at the teaching of Agriculture were premature and were based on purely academic considerations.
- (e) The Departmental organisation was defective and the staff employed was ill-paid and insufficient.
- (f) No systematic efforts had been made to remove some of the superstitious and uneconomically wrong methods amongst the agriculturists.

142. Most of the causes of the failure of the Department are now well-understood both by the Government and the Department. The recent policy of the Department has been to study local conditions more thoroughly and to suggest such improvements as are practical and as are within the means of an ordinary agriculturist. We, therefore, recommend that a well-considered forward policy should be adopted for the development of Agriculture on scientific lines.

Recent policy of the Government.

143. The main function of the Department should be to work out improvements in agriculture and introduce the same in the State.

Functions of the Department.

Agricultural improvement is, however, a comprehensive term and refers to a variety of problems from land policy to financing and marketing, all of which the Department cannot deal with. It is, therefore, necessary to define clearly what the Department is required to do, and confine its activities to these functions only. Its chief function, in the opinion of the Committee, should be to work out and introduce improvements in the *Art of Agriculture*, meaning thereby everything referring to the farm work and mat-

ters directly relating to it. This would comprise briefly of the following subjects:—

- (1) Study of the methods of tillage and crop treatments including questions of soils, implements and manures;
- (2) study of the existing varieties of crops, their improvements and introduction of new profitable varieties, including the question of seed and fruit trees;
- (3) study of fruit culture;
- (4) inquiry into the farm economy, including questions of adjustments in the farm organisations—use of labour and cost-saving machinery and the final preparation of farm produce;
- (5) prevention and cure of crop pests and diseases; and
- (6) animal husbandry including veterinary aid and animal breeding.

144. Now, the work of improvements can be carried on only through the following successive stages:—
Different stages of improvements.

- (1) Survey of agricultural conditions;
- (2) Experiments and investigations as suggested by the survey; and
- (3) The introduction of the improved methods among the cultivators.

145. To carry on the above work systematically, the Department should first make detailed inquiries, *i.e.*, study the local conditions in their economic and technical aspects. Agriculture is a very complex industry. Its condition is determined by natural conditions of the soil and climate on the one hand and economic condition and knowledge and experience of the cultivators on the other. Art of Agriculture of a given locality is developed in adjustment to its natural and human factors and as these conditions are not the same all over the State, we have several types of agriculture or agricultural tracts each having its own problems of improvements and requiring separate study by itself. For full and detailed study of the agriculture of a tract one has to collect its historical data, find out how it developed, what the present position is, what possibilities there are for improvements, whether the questions pressing for improvements are of farm organisation, or of existing methods and practices or of labour or crops or implements—one or more of a like nature. The study must supply a full agricultural survey of the locality and unless that is done, definite work with a definite point in view cannot be taken up. Such survey requires knowledge of Economics as applied to Agriculture and of the technique of the Art, and the Department should have sufficient number of well-trained staff to carry out this work of first importance.

146. When the problems are ascertained, the lines of further investigations are to be laid out and experiments carried on. Agricultural experiments cannot be carried out without full trials often supplemented by laboratory tests; for this, the Department must have small farms or stations under its control—one in each agricultural tract. There should be four permanent farms or stations at or near each of the District Head Quarters to centralize the agricultural activities of the District and the other stations should be more or less of a temporary nature with farms taken up on lease for the solution of some specific problem and closed when the problem taken up in hand is solved. There are about 16 different agricultural tracts in the State and there would be as many farms and sub-stations in future. The area taken up on lease would not cost much; the annual expenditure of about Rs. 50,000 most of which will be realised by way of returns—ought to suffice for all the sub-stations. The original Huzur Order should be modified and the Department should be permitted to carry on experiments as are warranted by local conditions and should be provided with the necessary expert staff and facilities.

147. In agricultural experiments, mere field assistants under an agriculturist do not suffice. Some problems require help and guidance of specialists in Botany, Chemistry and Mechanics and these should be employed from time to time, whenever needed, to study special problems.

148. (1) AGRICULTURAL ENGINEERING:—Since the last decade, difficulties have been found in getting a good supply for agricultural labour. With the growth of industries and the development of Education, this difficulty is likely to increase. Wages of agricultural labour have also increased and even then it has been found difficult to get a sufficient number of men. Shortage of labour has been felt and there has grown a demand for improved implements. Already, a number of oil-engines and pumps have been set in *Charotar* in the place of bullock-driven *Kos* for well irrigation. A number of iron ploughs are being used instead of the old wooden ones. There is ample scope for the improvement in the indigenous implements. Most of them were designed centuries ago. Their efficiency could be improved by slight improvements in their make. This investigation is very important and we would place it in the fore-front of the Departmental activities. The War has also brought out a variety of gasoline tractors—small, simple and light—that may be introduced in parts of *Charotar* where irrigation by pumps has been introduced and where the cultivators hire bullocks for tillage. The boring of wells is also increasing. All this work requires a good Mechanical Engineer with a staff of competent borers and fitters. The Geologist in the Department of Commerce

and Industry assists the Department of Agriculture in boring operations and in designing labour-saving appliances as far as he can but he is not a specialist in agricultural engineering and his assistance could not be had for all the work of the Department. As far as we can judge, there is ample scope for the employment of a qualified full-time Engineer. Even if the boring work be improved, there should be a great saving both to the people and the Government. In the absence of an agency to render professional advice, it has several times been found that the cultivators set up engines of the wrong type and at places that are not suitable.

149. Arrangements should be made at the *Kala-Bhavan* for the use of the workshop for making experiments in implements and for training of drivers on oil-engines.

The use of Kala-Bhavan workshop should be made available.

150. The Engineer should have a separate Office with a good Accountant and a Shirrastedar to manage correspondence. Otherwise, we are afraid, the old mistakes would be repeated and there would be confusion in accounts and stores.

The Engineer should be provided with the necessary staff.

151. Boring work is done to some extent by the district Local Boards for the provision of drinking water also. But they have neither the competent staff nor efficient tools to do the work satisfactorily. It would be more economic for the Local Boards to have their boring work done by an expert engineer who may be appointed by Government. We propose, therefore, that the boring sets of the District Boards may be handed over to the Government Engineer. The District Boards may give a contribution towards the expenses of the branch in proportion of the work done for them.

The boring sets of the Local Boards should be entrusted to the Engineer.

152. For agricultural pests—the subjects of Mycology and Entomology are still in their investigation stage. It will take a very long time before any result of proved value is found. The Committee does not think it advisable to maintain this branch any longer, as the policy of the Government should be not to undertake anything which is not likely to give adequate results. The pests in Gujarat are being investigated by the Bombay Department of Agriculture and we may take advantage of their researches. The work of demonstrating two or three remedies that may have been found may be entrusted to the Demonstration Staff of Graduate Inspectors who have received training in Entomology in their College Courses.

153. (2) ANIMAL HUSBANDRY:—The Baroda State, at present, cannot do much in this line.

Animal Husbandry. It cannot take up detailed investigations about animal life, as are being conducted in Denmark, Germany or America. The chief problem, so far as our animal industry is

considered, is that of fodder, therefore, the question of fodder-crop should receive the serious consideration of the Department. Unless that question is solved, the animal industry cannot receive any impetus in the State. Within this limitation, the improvement in the breed of cattle may be met with by the supply of good bulls to villages and if the present facilities of free supply are taken advantage of by the Local Boards and villages, a cattle farm for bulls may be opened. For the present, bulls may be had from the Charodi farm of the Bombay Government. In the same way, stallions may also be kept at some more centres like Pattan. For veterinary aid, the number of hospitals is increasing and with the liberal policy of starting hospitals in co-operation with the Local Boards, almost every Taluka will have its hospital in a few years. Later on, it may be advisable to keep a few itinerant Veterinary Surgeons for the outlying villages. For the present, small medicine chests may be given to intelligent Patels in villages for the treatment of ordinary ailments. A proper inspection of the increasing number of Veterinary Dispensaries is not possible by the Director of Agriculture. We would recommend that for adequate supervision and technical control over all these dispensaries and other activities of this branch, a Superintendent of Veterinary, with a suitable establishment, should be engaged.

154. The most important industry connected with agriculture is dairy. The demand for dairy products—milk, ghee and butter—is increasing and the cultivators find it more profitable to keep milch cattle. The principal difficulty in developing this industry is the supply of fodder, as mentioned before, but apart from the solution of this difficulty, the State can assist the industry in a variety of ways. Co-operative Societies may be started for the purchase of concentrated food and the sale of the products and the Government subsidy may be judiciously given for the establishment of creameries and butter factories and for the installation of pasturing plants for cities. There is a good scope for the improvement in the methods of milking and handling of milk and other products. Improvements may also be made in the method of stabling and in the feeding of cattle also. The Veterinary Branch of the Department of Agriculture should co-operate with the Registrar of Co-operative Societies and develop the dairy industry which is growing in importance. The Veterinary Surgeons, at least some of them, may be trained in the dairy work before their advice may be made available.

155. (3) DEMONSTRATION:—The work of introducing agricultural improvements should be separated from that of experiments. The entire propaganda work of demonstrations, exhibitions, shows, seed and implements stores, advice by correspondence, publication of popular literature, etc., should form a branch of the Director of Agriculture's Office with a suitable staff under an assist-

ant. The Assistant should devote his attention mainly to the study of the requirements of localities and should devise means of bringing improvements to the notice of the cultivators. This will be the Extension Department—as is known in America.

156. (4) **AGRICULTURAL EDUCATION:**—As was seen before, several efforts were made to open special agricultural schools in the State; but all of them had to be closed as they failed to achieve their purpose. Mere teaching of theories would not be of any value and would not help the educated cultivator to stick to his profession and develop agriculture on scientific lines. The Department, it appears, has not much to teach in practical agriculture. Before its work is developed and till it is in a position to show more practical results we would not suggest the opening of any special agricultural schools. The whole subject of agricultural schools, both primary and secondary, is under discussion in British India and till now, no useful type has been found. The schools opened are under trial and already doubts have been entertained as to their usefulness. Under these circumstances, we would not advise the Government to open any more schools for the present.

157. But we would suggest that the Department should make special arrangements through its Extension Branch to organise short courses for some special subjects at some suitable centre. These subjects should be carefully selected and *bona-fide* cultivators may be invited to attend the courses for two or three weeks. The training of a few well-selected cultivators, in the improvements worked out by the Department, would have a more far-reaching effect than the opening of any number of schools that have nothing definite to teach.

158. The Director of Agriculture who must be an Officer of proved capacity for his organising and supervising ability should be freed from all Office routine as far as possible. He should be enabled to move out freely in the Districts, personally investigate the problems, work out schemes and put them through, co-ordinate the work of various branches of the Department and keep close watch over their progress. He must be given a competent Superintendent, with special powers, who should dispose off all Office routine and assist the Director in the inspection of the various branches of the Department. This is an absolute necessity in a Department where its head must devote all his time and attention to the various technical questions.

159. We, therefore, recommend that the organisation of the Department should consist of—

Organisation of the Department recommended.

1. Director of Agriculture with one Office Superintendent;
2. A Deputy Director in charge of experimental stations;

3. Extension Officer in charge of publication branch and store;
4. Agricultural Engineer;
5. Experts in
 - (1) Economic Botany,
 - (2) Agricultural Chemistry, etc.;
6. Superintendent of Veterinary with a necessary staff of Veterinary Surgeons in charge of Hospitals; he should be in charge of the Dairy Industry with the object of improving it.

160. If good and thorough work is to be done, we strongly feel that the organisation and the staff, as recommended above, should be provided. Unless this is done, we do not think the Department* can do useful and abiding work. The money spent would otherwise be wasted and the mistakes, committed before, would be repeated.

The staff asked for is necessary.

161. It may not be possible to carry out the programme as suggested above all at once. But in the beginning if a non-lapsible grant of Rs. 1 lac is provided, it may be possible for the Department to meet all the recurrent and non-recurrent expenditure therefrom. It should take one branch after another and develop it. If a good grant, as suggested, is given the Department would be sure of funds and would develop its works accordingly. Looking to the present expenditure of the Agricultural Department, viz., Rs. 55,000, the sum of Rs. 1 lac suggested by us is not more, and looking to the nature of the agricultural problems of the State, we do not think that the proposed grant is, in any way, very large.

A grant of Rs. 1 lac should be provided to the Agriculture Department for five years.

162. During the course of this inquiry, we made several inquiries of the Department to find out the results of the various scientific investigations and experiments made by it during the last twenty or twenty-five years. In reply, we were astonished to find that the records of previous enquiries were not available and where they were, they were so very defective that no correct conclusion could be drawn therefrom. This is a very sad confusion and confirms our findings in other respects that the whole organisation of the Department was very defective. However, to avoid mistakes in the future, we would strongly impress upon the Government the necessity of keeping proper records of the investigations and their publication in the Annual Reports of the Department. The present system of compiling Departmental Reports is very defective. The report should give full and complete information of the various experiments undertaken, the method followed, and the results achieved therefrom. There are excellent publications of the various experimental stations of Europe and America; they give full information of the objects

Publication of the results.

and the conditions in which the experiments are made, the methods employed and the results achieved. The Department must be expected to make full Reports and the Government must see that these instructions are properly carried out.

163. In order that the money may be properly spent and in order to decide the sequence of the work to be undertaken a permanent Committee of three may be appointed under the Presidentship of the Minister in charge of the Agricultural Department to settle details and watch progress. The Committee should see that only useful work is undertaken and that the progress is well-maintained. Looking to the immensity of the Agricultural interests of the State, the staff and the expenses proposed are not too much. It need not be mentioned that the staff employed should be the best; there should be no compromise in their selection.

A permanent Committee may be appointed to look after the progress of the Agriculture Department.

164. Before we leave this subject, we would bring to the notice of the Government one important fact. The whole question of agricultural improvements is beset with many difficulties and the State must be prepared to meet with some failures. It must be thoroughly realised that the extent of agricultural improvements is limited by several factors such as climate, seasonal fluctuations, social and economic conditions of the cultivators over which the Department as such cannot have much influence or control. These are factors that impose limitations on the successful working of the Department and they must always be taken into consideration in judging of the Department's work.

Climate, seasons, etc.. should be taken into consideration while expecting results.

(C) Sub-division of Agricultural Land.

165. The fundamental problem in Agricultural Economics of the State is that of the scattered and minutely subdivided holdings of the cultivators making the cultivation difficult and costly. No far-reaching improvements on a scientific basis are possible so long as the present system of holdings remains.

The fundamental problem in the Agricultural Economics.

166. The following table shows the total agricultural land of the State, the survey numbers of fields into which it is divided and the number of registered land-holders (*Khatedars*) who own them:—

Fields and cultivators.

Name of District.	Total agricultural land in bighas.	Survey numbers into which it is divided.	Number of Khatedars.	Average land per Khatedar.	Average Survey numbers per Khatedar	Average area per Survey number.
1	2	3	4	5	6	7
Baroda ...	1,717,319	430,601	107,638	15-19-2	4.00	4
Kadi ...	2,513,982	589,687	141,145	17-16-5	4.18	4½
Naosari ...	1,046,176	216,748	52,652	19-17-8	4.12	4½
Amreli ...	972,040	55,635	17,214	56- 9-7	3.23	17½
Total ...	6,249,517	1,292,671	318,649	19-12-4	4.06	4½

This shows that the average land per Khatedar for the whole State is 19½ bighas. Taking the Districts separately, Amreli stands first with 56½ bighas per Khatedar. After Amreli comes the Naosari District with about 20 bighas, then stands the Kadi District with about 18 bighas per Khatedar. If the average holding of a Khatedar was a compact field of the area indicated by these figures, the situation would be an ideal one and would not leave much to be desired. When we classify the different holdings according to their area, we find that out of the total number of 318,649 Khatedars there are 400 who hold over 500 bighas of land; 6,390, or 2 per cent., possess from 100 to 500 bighas; 70,055, or 20 per cent., hold from 25 to 100 bighas of land; 150,629, or 47 per cent., hold from 5 to 20 bighas of land and 91,176, or nearly 29 per cent., possess less than 5 bighas of land. Taking together the holders of all grades upto 20 bighas, we find that the large majority, *i.e.*, 77 per cent. of the Khatedars come within this class. Khatedars possessing more than 20 bighas of land form only 23 per cent. of the whole, 47 per cent., or nearly half of the Khatedars are in possession of land from 5 to 20 bighas. If these fields were compact, *i.e.*, consisted of only one plot, it would no doubt be a very good thing. But, unfortunately, it is not so. The holding of each Khatedar consist of a number of small fields which are scattered about in the village *sim*, and are at a great distance from each other. A comparison of the survey numbers with the total number of Khatedars gives about four pieces to each Khatedar, But this gives only a partial idea of the position. 77 per cent. of Khatedars are cultivating Khatedars and 23 per cent. are land-lords whose land is cultivated by the cultivating Khatedars or other tenants.

Many of the survey numbers, though reckoned as one, have numerous 'pot', 'paiki' and other subordinate divisions whose number is large and not easily ascertainable. In the Taluka of Petlad, where a special inquiry regarding these 'pot' and 'paiki' numbers was made, it was found that along with 72,575 survey numbers there were 10,381 'pot' and 8,020 'paiki' numbers; the total number of plots being 90,976. It would appear that though the average number of fields per Khatedar comes to 4, the cultivating Khatedars must have on an average more than four pieces to manage. One cultivator may have two or three, while a third may have 8, 10 or even more. These pieces are seldom contiguous. They are usually situated in different localities of the *sim*. One field may be near the village site and another at a distance of one or two miles.

167. The most important problem in the Agricultural Economics of the State is that of the increasing sub-division of agricultural land. These small pieces are sub-divided on inheritance or when the owner has to sell or mortgage these. So, from generation to generation, the whole of agricultural land is getting sub-divided into small fragments doing a great harm to agriculture.

Evil efforts of the sub-divisions.

The evil effects of this system may be summarised as under:—

- (1) Waste of labour and cattle-power.
- (2) Waste of land in hedges and boundary marks.
- (3) Waste of manure, etc.
- (4) Watching of crops impracticable.
- (5) Wells cannot be sunk economically.
- (6) Labour-saving implements cannot be used.
- (7) Difficulty of roads, water channels, etc.
- (8) Change in cultivation inconvenient.
- (9) Increase in cost of production, etc.
- (10) General backwardness of agricultural conditions.

Prior to 1905, the revenue rules permitted the sub-division upto 3 bighas for dry crop land and one bigha for wet land. In that year the Revenue Department, for the 'convenience' of the cultivators, amended the rules and permitted the sub-division of dry land upto a bigha and a half, and the wet land upto half a bigha. Even then, the rules were not fully effective. They did not stop the sub-divisions decreed by the Judicial Courts.

168. When this important question was brought to the notice of Government by Mr. Manilal B. Nanavati, in his Report on the Agricultural Indebtedness in the Baroda State, H. H. the Maharaja Saheb was pleased to order that a Committee should be formed to consider the question thoroughly and submit a report with proposals fully matured so as to enable His Highness to finally dispose of the question.

Origin of the question.

169. The Committee went into great details and investigated the question and in 1917 submitted its Report in which the following suggestions have been made:—

Report of the Special Committee: Its recommendations.

“(A). For Prevention of Further Minute Sub-Division.

(i) The present limit of recognising sub-divisions of agricultural land to the extent of $1\frac{1}{2}$ bighas of *Jarayāt* and $\frac{1}{2}$ bigha of *Bagayāt* or *Kyari* land, should be raised for further sub-divisions upto 8, 3, and $1\frac{1}{2}$ bighas respectively, and the needful amendment made in section 83 of the Rules made under the Land Revenue Code.

(ii) The Law of Inheritance need not be interfered with; but whenever the partition of agricultural land among the heirs leads to smaller divisions than the limit of 8 bighas of *Jarayāt*, 3 bighas of *Bagayāt*, and a bigha and a half of *Kyari* land instead of actual partition of land, its money value may be realised by giving it to the higher bidder amongst the heirs and in case none of them is willing to have it, amongst the outsiders; money thus realised may be distributed among the heirs. Section 262 of the Civil Procedure Code may be amended accordingly.

(iii) The Law of Pre-emption may be applied to agricultural lands below the area of 8 bighas of *Jarayāt*, 3 bighas of *Bagayāt* and $1\frac{1}{2}$ bigha of *Kyari* lands, so that when such pieces are about to be sold, they can be sold only to the neighbouring Khatedar or after taking his first refusal.

(iv) The minimum dimensions of an economic holding may be fixed after having regard to local conditions of land, nature of cultivation, etc., for each district. When new waste lands, bid lands, etc., are to be given for cultivation by auction, they should be divided into plots of economic size and sold on condition that divisions below this limit will not be recognised.

(B). For Union of Small and Scattered Fields.

(i) Voluntary exchange of contiguous fields belonging to different holders should be encouraged by:—

- (1) exempting them from the usual Stamp and Registration charges, and
- (2) making it compulsory on Vahiwatdars to advise the people to effect them and to bring them about, as much as possible, with the help of the members of the Village Panchayat, leading Zamindars, farmers and other respectable and influential residents.

(ii) When land relinquished or attached is to be given for occupation, it should be either sold by auction only amongst those whose fields are contiguous, or if there is only one such person it may be given to him, if he is willing to have it, for an amount not exceeding 3 to 5 times its annual assessment or for

its market value, whichever may be higher. It should be given to outsiders only when those whose fields are contiguous do not wish to have it.

(iii) A Permissive Act may be passed to effect consolidation of the existing small and scattered holdings on the principle of original ownership. The main lines on which it may be drafted should be as indicated in para. 58, of the Report."

170. His Highness the Maharaja has now approved of these recommendations and has ordered that a Bill may be drafted embodying them and submit to the *Dharasabha* (Legislative Council). A Bill to this effect has already been published and suggestions have been invited. It may be mentioned here that all the evidence that is before us approves of such a measure.

171. Along with the consolidation and prevention of sub-divisions of holdings, the State must take adequate measures as mentioned elsewhere for the introduction of a thorough system of Agricultural Banking. No consolidation can take place unless the Banks are ready at hand to finance the cultivator; the Bank must be willing to redeem burden on old holdings, to defray expenses of new improvements as also the cost of the proceedings.

172. The State must also be prepared to bear a portion of the expenses of the consolidation of the holdings when they are undertaken for a whole village. In the beginning, it must pay a major portion to enlist the faith of the people. The proceedings would be entirely new and the cost unascertainable, and the people, therefore, would be unwilling to undertake a costly measure by themselves.

173. With the restrictions on sub-divisions, we think, that a part of the existing population would be relieved from the land, and the State shall have to adopt various measures to train them in industries and provide employment for them by the encouragement of industries at several trade centres. As we will be dealing these questions in another part of the Report, we do not discuss them here beyond indicating the need of a comprehensive industrial policy for the State as would be necessitated by this measure.

174. Before consolidation proceedings can be undertaken an amount of propagandist work would be required. Probably, a few villages would have to be induced. And this work, important as it is, cannot be properly done by any of the existing Departments; they have their own duties to perform and the work is of such a nature that it would require the full energies of a well-qualified Officer. Therefore, we propose that on the passing of the Act, a Special Officer may be selected and put on this duty to carry out at first the propagandist work and

then the actual rearrangement in typical cases. Otherwise, we are afraid, the labours of the previous work would be wasted and this important but delicate problem would not be adequately dealt with. We have many times seen that several important measures have been neglected or mismanaged for want of a trained or an adequate staff.

175. Along with the consolidation of holdings, there is another subject that requires consideration. The fields in some of the villages are so distant from the village site that farmers have to walk for more than two miles from their houses to the farms. This causes great trouble and waste of time. We are of opinion that as far as possible, the cultivators should be permitted, even encouraged, to build hamlets in the village area near their farms.

The cultivators should be permitted even encouraged, to build hamlets in the village area near their farms.

Compared to the benefits to the people from this measure the expense to the State is very small and we believe should not be grudged. This question was brought to the notice of His Highness in 1915, when he was in tour in the Kadi District, and His Highness ordered that permission to build hamlets may be granted provided the settlers do not ask for the village service under the Revenue Rules and are prepared to pay the full assessment as determined by the Settlement Rules (H. O. No. A-18, dated 6th February 1915, *vide* Appendix XII). Under this new order, the cultivators living in the hamlets will have to forego the advantage in rate got because of the distance of the field from the old village site; but they would not mind it as there would be no change in the rate of assessment. But the part of the order regarding village service and protection operates as a sort of check to the formation of hamlets.

In view of the fact that such hamlets would relieve congestion in villages and improve their sanitation, besides improving agriculture, we think Government should help them on giving grants in village service when necessary.

The cultivators are permitted to build *Kacha* houses in their fields and no penalty is imposed; but if they build *Pucca* houses an enhancement of 50 per cent. in rate is imposed. As this is levied only on the part of the land occupied under the *building* it cannot be said that it is heavy. But we think it would be good policy not to charge more than the ordinary land assessment. With the consolidation of holdings, the farmers would come forward to live on their farms and, therefore, every encouragement should be given to them.

(D). Agricultural Finance.

176. Since the former has to depend upon outside capital to finance his agricultural operations, it is important to notice how far the present system of finance is effective and efficient, what are its defects and what improvement can be effected therein, and whether it is possible to adopt any other measures to provide better facilities. The nature of the agriculturist's business is such that he must borrow and that too freely. It is, therefore, necessary that the system must be suited to the needs of his industry, that it must not be such as may lead him to extravagance and ultimate ruin; on the contrary, it must be such as would slowly wean him from such habits and inculcate in him the habits of thrift, prudence and forethought. Easy credit facilitates reckless expenses and encourages uneconomical habits.

177. There are four agencies in the State that finance agriculture.

- Existing financing agencies.**
- I. Private Money-lenders.
 - II. Agricultural Banks.
 - III. Tagavi loans from Government.
 - IV. Co-operative Credit Societies.

I. Private Money-Lenders.

178. Ninety-five per cent. of the present capital invested in agriculture is advanced by private money-lenders. It is impossible to give a correct description of the money-lenders in the State. These are of all imaginable types and shades, from the highly respectable banker to the cruel and heartless Shylock. Still for convenience sake, they may be divided into three distinct groups. Each group has a special characteristic of its own, though the dividing line is not very sharp. There are several numbers in each group that do business in the same way as members of the other groups. The first group includes the city and town bankers and Sowkars. They are mostly Baniyas and sometimes Brahmins. In some Talukas the former predominate while in others the latter. The second group is composed of the village shop-keepers and traders and the third group consists of successful cultivators.

179. The members of the first group are mostly Baniyas, sometimes Brahmins and reside in Taluka towns or in prosperous villages but generally in towns. They lend to the better class of cultivators. Their advances are usually of larger sums above 100 or 200 rupees. Their dealings are generally straightforward and honest. They charge from 6 to 12 per cent. interest and lend money both on personal security and the security of land. When the security is a mortgage with possession, they permit the cultivator to farm the land. Generally, they are not land grabbers though in every

case they own a few bighas mostly fore-closed. Though their greed for land is not great they would not mind an opportunity to get a valuable plot of land. They do not receive produce in return for principal and interest, but always accept cash in payment. Very seldom, they charge discount when an account is opened. Generally, they do not drive hard bargains. Each one of them has a sphere of influence and operation in certain specified villages. With money lending they combine some other kind of business, trade in produce or brokerage.

180. The second group is composed mostly of village shop-keepers and traders. They are generally grocers, drapers, brokers and grain merchants in one. They advance their goods and wares on credit to the cultivators of their own and surrounding villages. They also give cash loans. But the bargain is harder and harsher. Besides charging a high rate of interest, *i.e.*, from 12 to 15 per cent., they charge some discount when an account is opened. They always expect to receive produce of land in lieu of principal and interest. This gives them an additional advantage. They get a good deal in weight and in the rate given for the produce. They advance to the middle and lower classes of cultivators, to farm servants and farm labourers. Their bargains with the latter class are much harder than with the former, the rate of interest varying from 25 to 75 per cent. They charge an anna per month, per rupee. The cultivators who offer better security are charged 12 per cent. as book interest while extras cost them from 10 to 15 per cent. Every one of this group owns some land in the village, purchased or fore-closed. They have always an eye on some good field in the village and take it at the first opportunity. The contracts of these people are very harsh. They take every mean advantage of the weak position of the ryot. Though they try to help the *Khedut* out of all difficulties, it is more with a view to get better advantages later on. To new clients they freely advance and for all purposes, and go on advancing to the highest limit. The dealings of this class may be described as harsh but they are harsher when they deal with backward classes people like the *Kaliparaj* of the Naosari District. These ryots are very primitive and backward and every advantage is taken of their ignorance. Here, the *Khedut* is nothing but a serf of the *Sowkar*. He can have no dealing except through the *Sowkar*. He must buy from the *Sowkar* and sell all his produce to him. All the produce of the farm is immediately taken to the *Sowkars*, leaving very little for his own purpose, and a little later when he wants something he must go back to the *Sowkar*. The *Sowkar* does not render any account to him. Probably, the ryot does not know how much he is indebted, the accounts grow from year to year and never close. The ryot must live and work for the *Sowkar*. This condition generally prevails in the Rani Mahals of Songadh and Vyara and in Vaghodia and in all the other Talukas where lower classes of cultivators such as Thakardas, Kolis, Bhills, etc., are found.

181. The third class of money-lenders consists of successful cultivators or land-lords—Kunbis and Patidars—who combine money-lending with farming. This class is just growing and is mostly confined to the Baroda District, to Sinore, Baroda, Petlad, and other parts of *Charotar* and *Kanam*. There are a few more in Naosari, Amreli and also in the Kadi District. On the whole, their number, though growing, is not very large. They form the most intelligent class of the farming community shrewd and business-like.

182. This class of money-lenders has dealings with people of their own class, and so far as they are concerned, they are fair. But their dealings with the lower classes of cultivators such as Kolis, etc., are as hard as those of the village money-lenders.

183. The *Sowkar* meets all the wants of the *Khedut*, he is easily approachable, he fully understands the needs of the farmer as well as his capacity to repay the loans. The *Sowkar* is on the spot and visits his client frequently every year, and carefully notes changes in his condition. He is ready on the spot to receive the produce when the crop is ripe in the field. In distress, if the farmer is honest, and hard-working, he puts him on his legs to continue his business over again. He receives money so long as it is possible to get; and resorts to courts only when absolutely necessary to do so. Though this system is very elastic and meets the requirements of individual farmers in a very easy way, it has many disadvantages to counterbalance the benefits. First, the rate of interest is very heavy and the poor farmer succumbs under these charges in the long run. Some of the bargains are very unconscionable. There is no restraint on the borrowing. Money lending by *Sowkars* does not at all encourage thrift or savings, nor does it organise agriculture and place the farmer on a permanently better footing, economically or morally. Looking to the enormous investments of the *Sowkar*, it is impossible to drive him away from the business, however bad and undesirable he may be. In the absence of a better system of agricultural finance, he must be tolerated. What is needed to improve him and his methods is to introduce a thoroughly efficient system of banking as an honest competition in the field to influence him directly.

184. Since it is impossible and at the same time, undesirable to abolish private money-lending, it has been suggested that certain restrictions may be put on the method of money-lending as conducted by the *Sowkars*.

Restrictions on money-lenders proposed.

The following are some of the important proposals:—

- I. That no man be allowed to lend money to a farmer without a license.
- II. That the books of the *Sowkar* should be registered.

- III. That the creditor must give or offer to give receipt of payment made by an agriculturist.
- IV. If asked, the creditor must submit an account of his *Khata*.
- V. That a pass-book, as in a Savings Bank, may be given by the *Sowkar*, which would show the condition of the account,
- VI. That some kind of Usury Legislation should be passed to restrict the operation of the money-lenders.

185. Before we examine these in any details, we would state in brief the various measures introduced by the State to protect the ryot against unrestricted and unscrupulous money-lending. These may be summarised as under:—

(1). *Interest Act*.—This Act was passed in the year 1898. Under this Act, no Court can allow more than 12 per cent. interest. Where more than 12 per cent. is charged the contract is not deemed null and void but the Court does not allow more than 12 per cent. interest.

(2) The Law of *Damdapat* is enforced on all money suits; but the operation of the rule is made applicable from the period of the last settlement of the accounts; it does not apply to the transactions from the very beginning.

(3). Under Section 174 (c) of the Civil Procedure Code, a certain class of backward agriculturists can have their accounts looked into by the Courts even when they purport to have been finally settled by the parties. By the same Section, the cultivator is permitted to sue for accounts.

(4). In the execution of decrees against a cultivator, his land paying assessment upto Rs. 50, his house, his cattle and food grains, which are absolutely needed for his agriculture and maintenance, cannot be attached.

(5). No agriculturist can be arrested in the working-season. He can ask for payment by instalment before or after the sum is decreed.

We will now examine these provisions in some details and find out how far they have been able to protect the cultivators.

186. *Interest Act*:—The law allows 12 per cent. interest but there are hundreds of transactions in which more than 12 per cent. interest is charged and is not shown in the books. This restriction is got over in two ways; sometimes, a discount of one to ten or even twenty per cent. is charged and is not shown in the books; sometimes *Jarap* (advance) contracts are made for the repayment of the loan in kind, calculated at the lowest market rate. It is difficult to detect the former transaction but the latter could be; no regular rate of interest is charged and the money transaction is obscured by repayment in grains which the law, as at present stands, is not capable of taking cognisance of. The Usury Law recently

passed in British India brings under its operation transactions of the *Jarap* (advance-contract) nature. These transactions are very numerous and are largely resorted to by the poorer classes of cultivators. They are extremely hard, charging interest, from 100 to 200 per cent. Therefore, the Interest Act should be amended and should include the *Jarap* contracts in its operations as is done in the Usury Act. Unless this is done, the object of passing the Interest Act would not be fully achieved. We realise that even if such an amendment is made the *Sowkar* can get over the Law in thousands of ways, but we feel that the transactions can be looked into by the Court and their money value ascertained at fair market-rate. This will exercise a great deterrent effect upon many a *Sowkar*.

187. The Law of *Damdapat* is thoroughly useless. The money-lenders are very careful and they always make it a point to settle the accounts almost every year. It is very seldom that the Law comes to the assistance of the people. However, it has one good effect that the creditor is always reminded of his debts even though they may run from year to year, and large accumulations are avoided.

188. Very recently, all the Judicial Courts were requested to give their opinion on the working of the section regarding the inspection of accounts. We have seen the replies. In most of the cases, decrees were made without the inspection of the old accounts as the defendant had not asked for inspection. The ryot is mostly illiterate and does not raise any objection. The Court, of its own account, very seldom looks into the transaction from the beginning; the Law does not impose any such obligation on the Judge. Only where the defendant raises some objections that the Courts make inquiries and in some cases with good results. The section is very useful and should be retained on the statute book but it should be so amended as to impose an obligation on the Judge to see all the past transactions from the beginning. The section also should be applied to all agriculturists and not only to a few backward classes. At the same time, definite instructions should be laid down as to how the accounts should be settled. Unless these improvements are made, no adequate relief could be given as contemplated in the Interest Act.

189. In the inquiry mentioned above, information was collected as to the number of suits filed by the debtors for accounts. It appears that only one suit was filed during the last 20 years. Looking to the helpless condition of the *Kheduts*, it is not possible that they can take advantage of this section, to any extent. If he has cash, certainly the *Sowkar* is ready to receive it. But the Law as to the method of settling the accounts is not definite and no useful purpose could be achieved by filing a suit for accounts. However, it is a useful section and may be retained. It may be of great use when the

Sowkar is contumacious and is unwilling to show accounts, when some provision is made for the liquidation of the old debts.

190. A certain amount of the cultivator's land, food and houses are exempted from the execution of decrees of the Revenue as well as Judicial Courts. Upto 1904, this rule was confined to the decrees of the Revenue Courts only; and, therefore, it had no material effect, as the Judicial Courts could execute decrees without any restrictions. In 1904, this anomaly was removed by the application of the rule to the execution of the Judicial Courts also. This affected the *Sowkar's* interest directly. If the land came under the minimum requirement and if it was in the possession of the farmer at the time of the execution of the decree, such land could not be sold for the satisfaction of the claim even though previously mortgaged. This affected the credit of the cultivator. Soon after, more suits were filed against them than before 1904, and there was a larger number of execution proceedings also.

Rules regarding the coercive measures allow the maintenance of the agriculturist.

191. Simultaneously, with this change in law, the mode of money-lending was a good deal modified by the money-lenders with a view to frustrating its object. Since this change in law, mortgages without possession are getting out of vogue while sales are showing a tremendous rise. Mortgages with possession are also slowly rising. This may probably be accounted for by the *Sowkars* demanding more security than before. Many of the sales are more of the nature of mortgages with conditional sales, than out and out sales. The condition of mortgage is oral and cases are known where it is not observed and could not be enforced in law.

Modification in money-lending.

192. The operation of this rule has curtailed the credit of the cultivator but it has not given him the full relief in saving the land from execution. The rule says that the land paying Rs. 50 or under in assessment may be exempted; it fixes the maximum but a smaller amount may be kept as may be determined by the Court. In the execution proceedings of the Judicial Courts, this is a fruitful source of litigation. The Revenue Officers are always anxious to collect as much of arrears as are possible and they are never over-liberal in exempting land from execution. We, therefore, propose that a minimum of land may be fixed for each Taluka which must be saved from the execution of decrees.

Operation of the Rule.

193. It has several times been said that it is no use taking special measures in preserving a useless class of cultivators—thriftless and uneconomic—on the land, the sooner they leave it the better; they can well go out and earn a better living elsewhere instead of eking out a miserable existence on land. It has been suggested that this class should not be given any special facilities of Tagavi, etc. It is true that most of the legislation of the nature mentioned above and the Govern-

The inefficient cultivators should not be helped.

ment policy is based on the belief that land requires more men and that cultivators of any kind should be encouraged to remain thereon. The result of the policy has been that all sorts of inefficient farmers—men who own a bigha or two of land, who have no adequate agricultural stock or implements, men whose cultivation is poor and who form a very large number—have been sticking to the land and are creating congestion without any benefit to anybody. The land in the State cannot maintain the whole agricultural population in comfort. If the lowest class of cultivators are removed and if the holdings are reconstituted, a prosperous peasantry could be maintained; and the liberated farmers can find a better living in industries and in Public Works.

194. On this consideration, the maintenance provision should be removed. We feel that they will have to be abolished in future. But they need not be abolished all at once; otherwise, a large number of men may have to be found work for immediately, which may not exist. But we would strongly advise Government to bear this aspect of the question in mind while dealing with legislation of the nature under discussion.

The maintenance provision for the agriculturists should be removed.

195. Now, we will take up the various suggestions made to the Committee and which are mentioned in para. 184.

Various suggestions received by the Committee.

It will be readily seen that all the suggestions pre-suppose that the *Sowkar* is a dishonest man and that he cheats the people in his transactions. Can we say that with truth of all our *Sowkars*? So far as our personal observation goes, we are not prepared to endorse any such sweeping condemnation of the methods of the money-lenders. No doubt there are black sheep in this trade as in many others. But the rogueries of the *Sowkars* are not of such a nature as to require this sort of check upon their business. Even if we impose these restrictions, they will not have any effect upon the ways of a blood-sucking Shylock. He will find out thousands of ways of evading the rules and restrictions. It is impossible to have all the transactions carried on under the supervision of a *Pancha* or *Jury* and when the Marwari and the farmer meet all to themselves no amount of restrictions are of any avail. There are thousands of ways of getting over them. Such efforts always add to the burden of the weaker party. Under this excuse the *Sowkar* may, perhaps, impose stricter terms. We have no faith in any restrictive legislation. Any step undertaken would redound to the discredit of the cultivator who is the weaker party and would drive away the *Sowkar* who is an evil but a necessary evil and has to be tolerated till a better system of money-lending is introduced.

The real remedy in dealing with the *Sowkar* is to create a thorough system of Agricultural Banking as an honest competition in business. Under the influence of the Co-operative Credit Societies, we have seen the *Sowkar* modifying his methods. In several villages where Co-operative Credit Societies have been

working satisfactorily the *Sowkar* has been forced to reduce his rate of interest and has been found willing to place deposits, even his own money, in the Societies. Not amount of legislation can bring this about. As will be seen later on, where legislative measures have been undertaken to deal with usury it may have a temporary good effect in dealing with the existing transactions; but when new business has to be done the terms are harder and harsher. Such legislation would, therefore, succeed only when the *Sowkar* has to be replaced altogether and for ever, by the creation of a new financing agency, but not till then. We have not arrived at such a stage at present.

II. Agricultural Banks.

196. With the object of introducing a new system of banking as an honest competitor in the field and with a view to help the backward tribes of the Naosari District, His Highness' Government started Agricultural Banks at Songadh with a branch at Vyara in Naosari District and another at Harij in the Kadi District. Rules were made embodying the terms and conditions on which the State was prepared to help such Banks. The principal concessions granted by the State were (i) subscription of half the share capital, (ii) exemption from the payment of Stamp and Registration duties, (iii) collection of arrears by revenue process (subsequently withdrawn), and (iv) State audit and inspection. The first two Banks were started in 1899-1900 in the forest tracts of Songadh and Vyara of the Naosari District and are still working with more or less success. Later on, two more Banks were started in the Kadi District, in Harij (1901) and Visnagar (1905), but both of them were closed subsequently without any loss. They were closed, because their management was found to be incompetent. The local people did not take any interest and the managers, who were low-paid clerks, abused their powers. Since then, two more banks have been organised at Amreli (Kathiawar) in 1909 and at Bhadran (Baroda District) in 1910. They are working fairly well. For the last few years, these Agricultural Banks have been financing Co-operative Societies each within the limits of its District. Appendix XIII gives a combined statement of the financial position of all these Banks.

197. Whether these particular Banks succeed or not, the banking system promulgated by the rules is not at all business-like. It is very defective, and does not allow of efficient management. It is based on wrong principles. The Directorate is vested in eight members, four elected by private share-holders, and the rest nominated by Government and are generally an Asamdar, the Taluka Vahivatdar, the Taluka Registrar and the Suba of the Division who is Chairman. There can never be a more incongruous composition of the Directorate than this. The chief executive of the Division, the Suba, is a very busy Officer. He has multifarious duties to

perform and attend to. He has not the necessary time and leisure, even if we do not consider his disqualification to perform such a task. The same may be said of the Vahivatdar, and the Registrar. The Asamdar is very seldom a good businessman. In this semi-official Directorate, the Directors elected by the shareholders sink into insignificance, if not into oblivion. Under our particular administrative system, there is not much scope for private initiative much less for an independent exercise of the accorded rights. Under these circumstances, generally the Government officials rule and the Bank becomes a part of the Executive Department with all its defects.

198. There is another important objection to the system.

Other objections. It does not provide for or allow any interchange of surpluses. Each unit works independent of the other and there is no coherency in the system. For want of a Central Bank or a Central Union of such Banks, sometimes the funds lie idle and sometimes when more funds are needed they are not available. The reserves are kept in the Bank and are not placed outside or invested in any liquid securities to be easily cashed as needed.

199. Usually, the Banks make small loans from Rs. 25 to Rs. 250 or 300 and the area of operation is generally confined to a single Taluka.

Some more defects. With the Directorate as stated above, it becomes difficult to manage this business effectively. In many cases, the Manager has to go round for collection. The Directors cannot easily find out the credit of the borrower and have to depend upon the information supplied by the ill-paid manager.

200. Taking all defects into consideration, it was decided by Government in 1913 that no more Agricultural Banks of this type should be organised and the existing ones should slowly withdraw the loans given to individual *Khatedars* and as far as possible confine their dealings with Co-operative Societies in their Districts. This policy has been followed upto the present time.

The present policy of the Government regarding the Agricultural Banks.

201. Since 1905, the Co-operative movement has been started in the State and by this time it has been amply proved, as will be seen from what follows, that it is a movement best suited for the needs of small agriculturists. The Co-operative Credit Societies are much better than the Agricultural Banks from all points of view, economic and moral. But there are certain drawbacks. It cannot meet the requirements of large farmers who require big loans and who have been found unwilling to join Co-operative Societies. The Societies are also under-financed and if the better class of farmers are to be helped, the needs of the small men would not be fully met with. Then there are certain costly improvements to be made in agriculture. There are merchants and cultivators who want large loans to purchase power plants for irrigation, who want to introduce other costly improve-

ments; there are other land-lords who want to purchase land or redeem their property from old debts. All these men require loans from Rs. 1,000 to Rs. 10,000. They have at present to go to the *Sowkars* and pay a heavy rate of interest. They can give in security mortgages of their lands but the Commercial Bank would not lend against them.

202. To meet, therefore, the requirements of these important cultivators a scheme of a Land Mortgage Bank was prepared by the Department of Commerce and Industry, in 1916. We have seen the scheme. There in it was proposed to start an Agricultural Bank with a capital of Rs. 5,00,000 with a right to issue debentures guaranteed by the State. In order to facilitate the working and to help the agricultural classes it was proposed that Government should grant the following concessions over and above the concessions granted under the 'Co-operative Societies' Act.

The scheme of a Land Mortgage Bank.

- (a). Guarantee interest on bonds to the value of Rs. 20 lacs and, if need be, to under-write them.
- (b). Investigations of claims or burdens on land; right to call upon people to register their rights in land; right to inspect the Sub-registrar's records.
- (c). Right to fore-close and sell property if instalment not paid in time. Right to collect interest and sinking fund by summary process.
- (d). Rs. 5,000 to be paid for 10 years towards the expense of the Bank in its initial stages.
- (e). Bonds to be recognised as Trust and Court of Ward securities.

203. The scheme was sent for opinion to a Committee. The Committee gave opinion that the scheme was a very ambitious one and as a preliminary step, some Government financial assistance may be granted to the Co-operative Banks, to help them to finance successful Co-operative Credit Societies in the liquidation of the old debts of their members. This opinion of the Committee was accepted by Government and consideration of the scheme has now been postponed till some experience is got of the debt redemption proceedings.

Postponement of the scheme.

204. Though we agree with the Committee and the Government that some efforts should be made to liquidate the old debts of the members of successful Co-operative Societies and watch the results, still we firmly believe that there is a class of land-lords and cultivators who are not likely to join Co-operative Societies, and who require better facilities to finance their business. For these people, the organisation of a Central Agricultural Bank with branches in all important towns and agricultural centres is necessary. A Bank of the kind will

Necessity of organising a Central Agricultural Bank

stimulate improved agriculture and will also assist the Government in the consolidation of the agricultural holdings and their reconstitution on economic basis. A Bank of this kind may also relieve the State of the several financial obligations it has to undertake—such as the financing of (1) the Local Boards and Municipalities, (2) the land-lords and the Sardars, and (3) other public institutions that usually come to Government for assistance. Banking institutions are not created in a day. They require a series of years to develop and mature; they must start with small beginnings and gather experience and develop a policy. We propose, therefore, that a new scheme may be invited with the modifications suggested by the Committee and the question of Agricultural Banks reconsidered. If this proposal is accepted we would offer two special suggestions for consideration, viz: (1) that care should be taken that the new Bank should never come in conflict with the Co-operative movement; and (2) that the organisation of the Bank should be such that the interests of the State's subjects are adequately guarded. Similar Banks exist all over Europe and America and they work successfully along with Co-operative Societies.

205. We are informed by the Department of Commerce and Industry that the proposals are submitted to Government to revise the rules of the Agricultural Banks and they are framed on the model of the Co-operative Societies' Act. We are assured that all the objectionable features of the old rules are removed, that the Agricultural Banks to be organised under the proposed Act are primarily intended to finance larger agriculturists and also Co-operative Credit Societies. We do need a good Agricultural Banks' Act so that when people, of themselves, want to start Banks they can easily find a good business-like Act to guide and help them. We, therefore, recommend that these rules may be sanctioned.

III. Tagavi.

206. Another method of financing agriculture is the making of Tagavi loans by the State at low rate of interest to the farmers.

At present, there are three kinds of Tagavis granted under the rules.

- (1) Fixed or Jathu;
- (2) Famine; and
- (3) Special.

(1). The Jathu Tagavi is granted out of the fixed sum allotted to each Taluka and is given for the following purposes:--

- (a) To construct new wells and to make pacca wells out of kacha;
- (b) to make agricultural improvements including purchase of bullocks, seeds, implements, grass and the building of farm houses; and also

(c) to maintain the family.

On this Tagavi 5 per cent. interest is charged and the sum is to be repaid by instalments. At present, Rs. 2,99,500 are allotted to all the Talukas.

(2). Famine Tagavi is granted during famine times and is given for all sorts of purposes, viz., purchase of seeds, fodder, *kos*, and *varat*, digging of wells, for maintenance, etc. Usually no interest is charged on these loans.

(3). Special Tagavis are granted when some special improvements are to be effected such as the digging of wells and the installation of oil-engines and pumps. Soon after the great famine of 1899, large sums were sanctioned, without interest, as Tagavi for the construction of wells. Between 1900 and 1908 about 5,500 new wells were constructed out of this grant. In 1916, Rs. 50,000 were granted without interest for the purchase of oil-engines and pumps.

207. In spite of the fact that Tagavi is granted at a nominal rate of interest and in some cases without any interest, the people are unwilling to take full advantage of it and ask for it as a last resource. We have tried to find out the reasons of so much prejudice against it and we find the following as the most important:—

The causes why the people ask for Tagavi as the last resources.

- (a) "Leakage" in receiving it.
- (b) "Delay" in getting it.
- (c) "Rigidity" in the recovery of it.

(a). All the applications for Tagavi pass through the Patels and Talatis of the village. They certify that the applicant is a Khatedar and that his property is unburdened and then forward the application with their certificate to the Vahiwardar. If any further inquiries have to be made he makes them and then he sanctions it. Then payment is made by the Treasury Clerk. It is a well-known fact that the farmer has to tip the different functionaries for getting sanction and for receiving the payment. He has generally to tip the Patel and the Talati as also the Treasury Clerk. It has been stated that a cultivator would be lucky if he gets 75 per cent. of the amount. We have been told of cases that even where the Vahiwardar pays the amount himself, all the same, the cultivator, after he leaves his presence, has to satisfy the other men.

This graft is usual not only in the case of the Jathu Tagavi but even in Famine and Special Tagavis. It has been said that in famine times when the cultivators are very needy, it reaches its high water-mark. So long as the people are ignorant and unable to assert their own rights the graft will always remain. The village official and the Mahal staff will always be ready to take advantage of their weakness.

(b). Sometimes, it takes weeks, if not months, before the Tagavi is granted and in some cases sanction is obtained when

the purpose for the loan no longer exists. The cultivators, therefore, find it very inconvenient to get the loans.

(c). The rigidity of collection is another reason why the *Khedut* prefers the *Sowkar* to the Government Tagavi. When it is sanctioned, instalments are made but these are collected irrespective of the season. Even if it is a bad year, it becomes difficult to get postponement and in several cases the village officers have to be bribed to obtain the concession.

208. For these reasons, the farmers prefer a money lender to the Government Tagavi and go to the Vahivatdars as a last resource. In ordinary years, the system is unnecessary and on special occasions it is inconvenient and costly. Under any circumstances, it cannot be preferred to good banking facilities.

209. But so long as a number of uneconomic holders remain on land and so long as a comprehensive system of agricultural banking is not introduced, Tagavi loans will have to be granted by Government specially in famine times when heavy losses are incurred by the cultivators and when the *Sowkar* is unwilling to make loans. Therefore, we have to find out methods by which the evils complained of may be remedied or reduced. Until a comprehensive system of Record of Land Rights and the keeping of a revised Pass Book are not introduced, we would suggest that the following methods should be adopted:—

(a). That the loans may be given through the Co-operative Societies to members wherever possible.

(b). That the Vahivatdar, as far as possible, should manage the business himself; he should make personal inquiries at the village, sanction the loan on the spot and pay the sum immediately.

In famine times when Tagavi on a large scale is to be given, this method, we think, would work very well. It would not give any chance for the village officials to make mischief. Any intelligent, active and sympathetic officer can reduce this evil to the least if he wants to.

As for the rigidity of collection, it is necessary that if any time has to be given, it should be given at the right moment. The announcement should be made immediately when distress appears.

210. During the course of the inquiry, it was very often suggested to us that the best course of reducing the evils complained of was to grant the power of giving Tagavis to the Village or the Mahal Panchayats. We have given this matter our best consideration but we find that the evils complained of would not be remedied by introducing this agency as the sanctioning or distributing medium. The necessity for preliminary inquiry will always

Tagavi, if given through the Panchayats, will not serve the object.

remain and that is where most of the mischief is played. It would be difficult to arrange meetings of the Panchayats, every time a loan is needed. The divided responsibility between the two authorities, one to grant a loan and another to collect it, would make the system unworkable. The payment of the loan may be made through the Village Panchayat and probably a few rupees may be saved but the trouble to the Panchayat would be disproportionate to the gain and could be saved if the Officers are strong and exercise a proper check on their subordinates.

211. Since under the present backwardness of Agricultural Banking it is not possible to do away with the Tagavi, which has, in the past, in spite of all its faults, served a great purpose, the only alternative is to improve the Taluka agency and minimise the evils as best as could be done.

The Taluka agency should be improved.

212. In the foregoing paragraphs, we have discussed the general system of granting Tagavi for various agricultural purposes and the improvements to be made in the system of granting them. But we should like to say a few words as to the necessity for granting them. As mentioned before, these loans are necessitated on account of the backwardness of our financial organisation; and for their development it must take time. But in the meantime, Government will have to assist the cultivators in various ways. For all productive purposes—for the sinking of new wells, for the construction of irrigation bunds, for the installation of oil-engines and pumps, for the reconstitution of agricultural holdings, for the improvement of village sites, for boring wells and for so many other development purposes—loans should be freely advanced without interest or at a very low rate of interest. Such loans would be used for really productive purposes and will improve the general economic condition of the people, for which sufficient inducement should be given to the people to undertake costly improvements—specially those which would give slow return and would involve some risks. We, therefore, recommend that the Government should set aside a sum of Rs. 25 lakhs of rupees for effecting permanent costly improvements in agriculture and advance them to enterprising cultivators at 3 per cent. After all, we have to induce the people to effect improvement and a few thousands as loss in interest should not be taken into consideration—specially when vast improvements are necessary and the people are not sufficiently enterprising to undertake them without external aid.

Tagavi at a low rate of interest should be given for all productive purposes.

IV. Co-operative Societies.

213. The fourth method of financing agriculture has been through the medium of Co-operative Credit Societies. The Co-operative Credit Societies' Act was passed in the State in 1905 soon after the enactment of a similar nature in British India in 1904. This Act provided for the organisation of.

The organisation of the Co-operative Societies.

Credit Societies only when it was amended in 1912 and the new Act now permits all sorts of Co-operative Societies intended for the moral and economic benefit of the members. The Act is primarily intended for small agriculturists and artisans and people similarly situated.

214. At the end of 1917-18, there were 359 Societies, with 12,084 members and Rs. 13,57,311 as working capital. Out of these, 320 were Agricultural Societies with 9,510 members and Rs. 8,56,986 as working capital. The average membership per Agricultural Society was 29.7, average working capital per Society Rs. 2,678, and per member Rs. 90. All these Societies had received Rs. 1,23,026 as deposits. The usual rate of interest charged by these Societies was $9\frac{3}{4}$, but in a few cases it was 12 per cent. All these Societies are financed by two Co-operative Unions, two Central Banks, and three Agricultural Banks. The rate of interest charged by these Banks varies from $6\frac{1}{4}$ to 9 per cent.

It will appear from the above statement that out of about 3,21,570 *Khatedars*, 9,510 or only 3 per cent. have as yet taken advantage of the Societies. This advantage also may not be considered as full, for a Gujarat cultivator cannot meet his requirements from a loan of Rs. 90. Most of the Societies are under-financed and hence most of the members have still to go to *Soukars* and their old debts remain intact.

Of the 320 Agricultural Societies, 316 were Credit and 4 Non-credit. Of the latter two were Village Milk Supply Societies and two Irrigation Societies owning pumps and oil-engines. Some of the Credit Societies have been doing some business in joint purchase and sale and have introduced a few agricultural improvements, such as the introduction of iron ploughs, *gul*-making by improved processes, etc.; but the work does not amount to much.

215. During the last five years, loans to the extent of Rs. 24,94,412 were advanced by the Societies for the following purposes:—

Purposes of Loans.

No.	Purposes of Loans.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.	Total.
1	2	3	4	5	6	7	8
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1	For purchasing seeds, manure, etc.	1,33,400	1,43,874	1,71,816	1,74,360	2,52,842	8,76,292
2	For purchasing cattle ...	61,646	83,558	48,141	72,493	70,451	3,36,289
3	For imple- ments ...	4,557	4,264	4,424	9,170	8,315	30,730
4	For paying Land Reve- nue ...	77,373	84,731	63,826	55,426	55,804	3,37,160
5	For improv- ing land ...	8,944	9,253	15,749	23,191	36,616	93,753
6	For purchas- ing houses...	15,735	689	611	11,237	16,553	44,825
7	For paying debts ...	29,733	47,526	61,628	1,04,216	1,16,457	3,59,560
8	For household purposes ...	51,555	26,668	63,122	75,338	1,43,035	3,59,718
9	Miscellaneous.	6,905	13,495	13,669	9,424	12,592	56,085
	Total ...	3,89,848	4,14,058	4,42,986	5,34,855	7,12,665	24,94,412

216. The following statement shows the loans made and re-
covered and the overdue arrears of the
Agricultural Credit Societies during the
last five years. Appendix XIV gives a detailed statement of the
financial position of the Agricultural Co-operative Credit Societies.

No.	Year.	Loans made. Rs.	Loans recovered. Rs.	Loans over-due. Rs.
1	2	3	4	5
1	1913-14 ...	3,68,554	2,28,856	.....
2	1914-15 ...	3,95,903	2,90,632	85,235
3	1915-16 ...	4,19,492	3,41,367	1,08,168
4	1916-17 ...	4,93,835	4,22,501	89,582
5	1917-18 ...	6,58,815	5,17,707	76,214

217. In the course of our inquiry, we had made special inquiry into the working of the Co-operative Societies and the benefits derived by the people therefrom. Everyone of the witnesses that appeared before us except one—and he did not seem to have any personal experience of the movement—told us that the Co-operative Credit Societies were doing useful work and the system should be extended. Our opinion is that, of all the methods of financing agriculture the Co-operative Credit Societies are the best. The fundamental basis of Co-operation is thrift and self-reliance—qualities which need to be developed among our farming community. It is not by providing cheap and abundant capital that a small and struggling farmer can be helped. Cheap credit may ruin him unless he is thrifty and understands the use of credit. The Co-operative Societies supply credit at a cheaper rate but they supply it under certain restrictions. The loans must be used for the productive purposes mentioned in the loan applications and must be repaid punctually. The loans are sanctioned by a Committee of his own people who know circumstances of the applicant. The members' liability is unlimited, that is every one of them is jointly and severally liable for the debts of the Society and therefore there cannot be a greater restraint upon reckless borrowing or its abuse. The profits of the Society remain undistributed and therefore serve as a guarantee against future losses, increase the Society's own capital and ultimately reduce the rate of interest on loans. The management of the Society is entrusted to the chosen representatives of the members who have to work gratuitously, without any remuneration. Only men belonging to the same village can be admitted as members and they must be men of good character. The Society is expected, by its own organised efforts, to raise capital from local sources by taking deposits and should go to other financing agency as a last resource till it is able to establish its reputation for safe and sound basis. Besides the supply of credit the Societies can do any other work for the moral and material benefit of the members.

218. These are the principles on which the Co-operative Societies are organised and if they are well-understood and acted upon, certainly no better institution can be found for financing agriculture. All over the world, Co-operative Societies have been working since decades and have done immense good; they have replaced the money lenders as well as the Government and other Banks and have organised agriculture in a way undreamt of before. In Baroda, the Societies are very recently organised and we cannot expect immediate results; all the same, they have proved their usefulness by this time. They have

The results of the Co-operative movement in the Baroda State.

- (a) reduced the rate of interest and saved a large amount;
- (b) liquidated a part of the old debts of the members that carried a heavy rate of interest;

- (c) stimulated a desire for improvements in agriculture;
- (d) introduced co-operative sale and purchase of farm produce and requirements;
- (e) attracted local deposits at a very low rate of interest;
- (f) broadened the outlook of the members by creating interest in local improvements;
- (g) created and trained local leaders, who will in the future, play an important part in village improvements; and
- (h) organised villages.

It must be stated that all the Societies are not working with these ideas; there is a large number of Societies that are very weak in co-operative spirit and effort and exist only to get cheap money. But the spirit grows as the work develops and as the members get experience and we expect that all these would improve in course of time.

We have great faith in Co-operative Societies not as a financing medium for agriculture but for all other improvements—moral, social and economic—and we unhesitatingly recommend the Government to devote more attention and funds for their development.

In this Report, we do not propose to go into details of the organisation of the Credit Societies. The type of primary Society has been well-settled; the Raiffeisen model is, it seems, well-suited to the Gujarat conditions. The Central Banks and Unions are yet in their infancy and, we hope, will prove more useful to the movement than hitherto. In course of time, Institutions to organise and guide the whole movement, supervise the Societies and to finance the Banks will have to be started, similar to the ones started elsewhere. The Co-operative Department is fully alive to the needs of the movement; it is in touch with the movement in British India and elsewhere and provided, all the necessary facilities are granted, it would work its way on. The chief aim of the Department should be to organise the whole movement in such a way that it should be self-contained and should be worked and guided by the people themselves. However, there are certain points which we want to emphasise and bring to the notice of the Government.

219. From the Statistics presented above, it appears that the progress of Co-operation in the State is not very rapid specially when we compare it with British India. On consideration of the conditions in Gujarat, we find that the rate of development is bound to be rather slow because of all the places in India, Gujarat has the lowest interest rate; all the leading cultivators can get loans at 6 or 7 per cent., and they do not find it profitable to join the Societies, nor do they have the public spirit of joining them to help their poorer brethren. In many cases, they themselves are money-lenders and oppose the Societies. But apart from these and other difficulties, we feel sure, specially when we see

Need of a full-time Registrar.

the success so far achieved that better results could have been obtained if an independent Registrar had been appointed from 1906 as in British India. The first Registrar was the Jakat Adhikari and he had several other Departments, such as Commerce, Agriculture, Opium, Excise, etc., to manage. In 1908, the Joint Revenue Commissioner and the Director of Commerce was assigned the work and during that time also no progress was made. In 1909, a separate Registrar was appointed for a few months but when an independent Officer was appointed for the Commerce Department, he was asked to do the Co-operative work. Since then, the progress has been more steady and the work more systematic. But the activities of the Commerce Department began to increase from 1915-16 and the Co-operative movement began to proceed slowly. It required, it is true, a little consolidation about that time but this was just the time when a full-time Registrar would have made better progress. We are glad to observe that since 1st March, 1919, a separate Officer is appointed in charge of the Co-operative Department alone. We expect good results from this administrative change.

220. It may at the same time be mentioned that the movement requires all the support that the State can give. We may here indicate the lines in which this may be given.

The support that the State can give to the Co-operative Societies. Principles of State finance.

During the course of the inquiry, suggestions were made by several witnesses that the State should come forward to finance the co-operative movement with funds at a very low rate of interest. Similar demands have been made by several leaders of the people in the Co-operative Conferences, in the Panchayat Parishads and in the Legislative Councils. We know that there is a strong feeling among the people. This feeling rose out of the system of State aid in the early beginnings of the movement. Between 1905 and 1913, there were no Central Banks and Unions and the Societies were granted loans upto Rs. 3,000 at 3 per cent., to be repaid by 10 or 20 instalments. Since 1913, the Societies are financed by the Central Banks and State loans are granted in exceptional cases but at an enhanced rate of interest—6 p.c. (but no interest is charged for the first three years). And the popular demand for State funds at 3 per cent. has still continued.

In the early beginning, when no Banks are organised, the State help may be justifiable; but to continue the system for all times is undesirable. First, the State cannot find all the money required to finance the Societies, and secondly, the co-operative movement must rest on business principles. Co-operation, like any other business, should not be made dependent upon State aid in all cases and to do so is to weaken its strength and usefulness. The Societies must learn to be self-reliant and must try to raise funds from local sources by their own prestige and reputation. We do not mean to say that State aid is unnecessary; it may be given where it is needed; where the movement, of itself, is unable to get on by its own unaided efforts. State aid may be given in the organisation of Banks, in the provision of long-term

loans for the liquidation of old debts and the introduction of costly improvements, in the organisation of new types of Societies such as cattle insurance, dairy, etc. In new and costly undertakings, State-funds may be advanced at a low rate of interest or even without it, but to expect the State to finance the movement in general is suicidal. The State must be firm and withstand all such requests. In British India, the co-operative movement has prospered in the absence of direct financial aid from the State and there is no reason why the movement should not make a similar progress here. In special cases, State aid may be freely given. The State must be prepared to spend a larger amount on staff and other propagandist work. No funds should be stinted for this purpose.

221. The Banks, as at present constituted, advance short-term loans to meet ordinary expenses of agriculture of the members, but they have not advanced funds for the liquidation of old debts except on a very small scale. Now, in the management of Credit Societies, many times, the old debts of members form a great stumbling block, since the *Soukar* is always on the spot ready to take the produce before the Society can claim it and the high rate of interest is also continued. This dual system does not work satisfactorily and we are informed that in some cases the members suffer. It is, therefore, necessary that the Banks should be ready to assist the members with long-term loans to liquidate the old debts of the members of successful Societies. This would require issue of debentures by the Banks. We consider that the Central Bank at Baroda should be asked to extend its business and issue debentures to be guaranteed by Government, if necessary. It is true that the State has agreed to deposit a lac of rupees with the above Bank for this purpose, by way of experiment; but this should be supplemented by some permanent arrangement as suggested above. We recommend Government to pursue its liberal policy towards Central Co-operative Banks.

222. *Efficiency of the Societies*:—There were 320 Agricultural Societies at the end of 1917-18. All these have been classed as under:—

Class.	Number.	P. C. of the whole.
A. Model	24	7.50
B. Good	103	32.19
C. Average	98	30.62
D. Weak	23	7.19
E. Bad	4	1.25
F. Unclassed and new	68	21.25
Total	320	100.

The proportion of good and bad Societies is almost the same as in other places in India. Since every new Society and every member in it is on probation when a Society is started, there are bound to be some failures even though all the necessary care may be taken at the time of organisation. For the first year or two, the Society passes through a critical period; it meets with a number of enemies, in the form of *Sowkars*, etc. It takes, on an average, from two to three years before its status is established. If, during this period, proper care is taken, if all the difficulties are tried to be solved or met with, if enough trouble is taken to train the members in the principles and practice of Co-operation, a good foundation will be laid. To do this difficult work, a well-trained staff is required who can devote sufficient time to the work. We suggest, therefore, that

- (a) the Co-operative Department should be made permanent; it has, by this time, showed its usefulness and the Societies are going to remain amongst us; and an independent Officer should be continued in charge of it with no other work, as at present;
- (b) the best possible men should be engaged in this service with good salaries and grades; Government has refused to fix grades of the staff but in their absence, good men will not remain and would serve the Department as a stepping stone to some other place in some other Department, where better opportunities are available; as far as possible, only Graduates should be appointed as Auditors;
- (c) ample staff should be given to the Department; the number of honorary workers is still small; nor is there any propagandist body to take educational and supervision work and most of this work will have to be conducted by Government agency; we, therefore, suggest that for every sixty Societies one Auditor should be given and two probationers should always be in training. In spite of the fact that there are a number of good Societies, the general level of efficiency is rather low, and therefore, more time should be spent in educating the members;
- (d) the Registrar and his staff, for a few years to come, should devote a lot of time to propagandist work to popularise co-operative ideas and to train local leaders for the management of the Societies; the co-operative principles are not yet fully understood by most of the people in spite of the fact that we have always received good opinion of the Societies. This is the most important work and we suggest that more time should be devoted to it. After all, this is a people's movement and its strength will depend upon the reasoned popular support and assistance; and
- (e) special efforts should be made to train the village officials and the school teachers in co-operation. A Training

Class should be opened at District Head Quarters for the training of the village officials and other people and a course in civics, which will include Local Self-Government, rural and economic questions, co-operation, etc., be introduced in the Training Colleges for Teachers.

There are hundreds of villages where Co-operative Societies could be started but in the absence of trained men to work as Secretaries they are neglected. If by this means, we could get a number of workers, the cause of co-operation will find a great stimulus. We understand that efforts have been made in this direction and a few classes were opened at District Head-Quarters. But these efforts should be systematised and extended.

223. Of all the other methods of financing agriculture, the Co-operative Societies are the best. They are better than the *Sowkar*, as well as the Agricultural Banks as they are based on mutual help and thrift and they are sure to organise the members for further agricultural improvements. They are better than the *Tagavi* system of loans as there would be no leakage. The movement undoubtedly has its own difficulties. There may be dishonest leaders and unpunctuality in repayments but these can be removed by the elimination of the unfit and the education of the members, and the provision of adequate supervision. On all considerations, we prefer Co-operative Societies to all other methods of financing agriculture. Co-operation is slow to introduce but is a sure method if properly worked, as has been seen from the experience of the world.

224. Before we leave co-operation, there is one aspect of it upon which we wish to lay special emphasis. Co-operation cannot end with the supply of cheap credit; it must organise the whole rural life. The rural problem has been summarised by Sir Horace Plunkett in three words—Better business, Better farming and Better living—and it has been suggested to be solved by means of Co-operation. The solution must start with co-operation improving the business of agriculture, by improving the credit of the cultivators, by supplying funds at a low rate but under certain restrictions, by saving unnecessary expenses in buying farm requirements and in selling farm produce and by distributing sudden risks over a large period by means of insurance. But better business methods must lead to better farming, to the introduction of improved seeds and implements, to the improvement in the breed of cattle and in many other ways; otherwise, co-operation will fail. For these improvements, the ready co-operation of the Agriculture Department will be necessary. Both the Departments must, therefore, work hand in hand. We have found, especially in the Kodinar Taluka, that the Co-operative Societies show a great desire to adopt agricultural improvements where properly guided; they introduced new and profitable crops, they adopted improved furnace for sugar-cane juice boiling. There will be found many other Societies which will be ready to adopt

better farming methods if they are properly approached. It is difficult to mention the exact methods of bringing about close co-operation between the two Departments; however, we may suggest some by way of illustration.

1. Periodical Conferences should be arranged between the staffs of the two Departments when a common programme of work may be arranged.

2. The Agricultural and Co-operative Conferences should be held jointly and the staffs of both the Departments should attend them.

3. The Agricultural Inspectors must visit the Societies within their District and acquaint the members of new methods of agriculture. The Director of Agriculture also should pay occasional visits to Societies.

4. The staff of the Agriculture Department should be trained in co-operative principles and methods.

These and several other methods could be found useful in bringing about the union of the Departments. From the Reports of the Co-operative Department, we find that some four or five years before, the two Departments worked very closely; but very recently, the opposite tendency has been observed. This should be checked and remedied.

225. At present, most of the work of the Co-operative Department is confined to the organisation of Credit Societies. Of the 320 Agricultural Societies 316 are Credit and 4 are Non-credit. The Non-credit Societies are Milk Supply and Irrigation Societies. This number is very small and efforts should be made to develop co-operation in agriculture in many different ways. Looking to the present condition of agriculture, for some time to come, a large number of Societies will be Credit Societies, but the successful Credit Societies should be trained to take up other functions and new Societies for Agricultural Co-operation should be organised. There is no operation in agriculture to which co-operation could not be applied, from the ownership of land to the disposal of produce. We, therefore, strongly recommend that the Co-operative Department should study the various agricultural methods and try to introduce co-operation. We feel sure that if proper time and staff be given, Co-operative Store, Insurance, Dairy, Implement, Seeds and Manure, and Cattle Breeding Societies could be started. The State must give the Department full scope to increase its usefulness in these directions.

226. Besides the co-operation of the two Departments mentioned above, the co-operation of the Revenue Department is equally important and necessary. The Officers of the Revenue Department are in intimate touch with the people; they know them very well and they usually command a great influence. The Revenue Officers can, therefore, be of very great assistance to the Co-operative Department by popularising co-operation, by

selecting suitable areas where Co-operative Societies could be started, by suppressing unreasonable opposition from village officials and *Soukars*, by inducing all respectable persons to join the Societies and by being useful in many other ways. Therefore, it must be ruled that the Officers of the Department should be trained in co-operation and that they should help co-operation in all possible ways. In this connection, we cannot but repeat what His Highness the Maharaja Saheb said at the Co-operative Conference held at Baroda in 1914.

"I am glad to find that some of the Officers of the Revenue Department are taking keen interest in this movement. I hope, they fully realise the effects of the successful organisation of village life and improved agriculture. Not only will these simplify our general administration, but they will thereby also allow Government to devote their attention and energy to other equally important problems of the higher civilized life. It is my sincere desire that every Officer of the Revenue Department should not only study the problems of Agricultural Economics, but should always try to introduce modern ideas into the rural life of my people. I need not say that any Officer who does not show active and intelligent interest in these movements is unfit to hold his post, since he shows by such lack of interest, that he is out of touch with the spirit of his duty to his Government and the people. We do not want to make this movement official, but to our farming communities Government patronage and encouragement will be a great help in the organisation of themselves into Societies which will enable them to assist each other and so themselves."

227. If the village people are organised for business and farming and if they once understand the strength of their union, they can well be trusted to carry out many other improvements in village life. If they become thrifty and prudent they can be trusted to abolish wasteful social expenses, to improve their surroundings and the mode of life. In fact, they can well introduce better living. This tendency has already been perceived in some of the Societies, though in a very small way. They have set their face against costly caste dinners, they have distributed quinine and other medicines, and also they have shown desire to open libraries. If properly directed, they will be used for many other improvements in village life. What is wanted is sympathetic and continuous efforts.

In the co-operative movement, we see a great potential strength for the regeneration of the agricultural and industrial classes and we would strongly recommend Government to assist it in all possible ways.

(E). Record of Land Rights.

228. Before a thoroughly efficient system of Agricultural Banking is introduced, it is necessary that there should be available a complete Record

Record of Land Rights.

of Land Rights and Titles. The best security that a farmer can give for a loan is that of land and unless a clear and definite history of previous encumbrances and liens is available, it is dangerous to advance large loans against its security. The *Sowkar* who lives in the village and who has permanent clients handed down from generation to generation may have easy means of knowing the titles, but an outsider and specially an Institution like a Bank can have no means of readily acquiring the necessary information under the existing complicated system of land holding and ownership. The land may remain on Government records on the name of one member while as a matter of fact the real ownership may have passed to several others by way of inheritance, sale or mortgage. This information is known to a very few persons in the village but is difficult to be obtained by an outsider. Therefore, it has been found difficult for Agricultural and Co-operative Banks to advance loans freely.

In all the European countries where Agricultural Banks are opened, complete Records of Land Rights are to be found and on their strength the Mortgage Banks are doing good, safe and large business. In Egypt, too, complete records are available. As a matter of fact, the Egyptian Government guarantees the accuracy of titles to the Agricultural Banks of Egypt. In the Bombay Presidency, this system has been introduced since the last several years and on the basis of the information available the Co-operative Central Banks do their business with the primary Societies very freely.

Therefore, it is highly desirable that steps should be taken to establish a complete Record of Land Rights.

229. About ten years back, just about the time when this system was introduced in the Bombay Presidency, His Highness the Maharaja Sahib was pleased to order that similar records may be kept by the Baroda State and the

Survey and Settlement Commissioner was asked to study the system in the Bombay Presidency and report. But the question was looked into from the point of view of Land Revenue collection and since no difficulty was found therein, the matter was unfavourably reported upon and dropped. Thereupon, the Registrar of Co-operative Societies suggested that as a next best substitute the index of documents kept in the Sub-Registrars' Offices in the Talukas should be made readily available. From the documents registered, indexes are prepared but these indexes are kept by villages and not by survey numbers. The index by village is again kept in separate yearly volumes, so that when inquiries are made of encumbrances of a particular survey number of a village, unless the year of the execution of the document was known, it is difficult to find out the information. Therefore, it was proposed that the indexing should be revised and a new system of indexing introduced under which a card index should be prepared to be indicated by the survey numbers dealt with in the documents, and all the cards arranged in a cabinet so that the information may be easily available. As a supplement to this method of

**The next best substitute to
the Record of Land
Rights.**

indexing, it was proposed that the form of the *Khatedar's* Pass Book should be revised so as to show all the land held by him as well as the encumbrances thereon. This Pass Book must be produced when registering a document dealing with the land entered in it, so that the transaction may be recorded therein by the Sub-Registrar. With the Pass Book containing this information any Bank or Co-operative Credit Society may safely fix the credit of a cultivator and deal with him within the limit.

In 1914, this proposal was accepted and as an experiment it was ordered to be introduced in the Padra Taluka along with the old index system. Since the old indexes have not been reduced to the card index and since the Pass Books of all the *Khatedars* have not been revised as proposed it is impossible to test the real merit of the new system. But there is not the least doubt that as a substitute for the Record of Land Rights, this improved method of indexing documents is very useful and should be introduced.

230. At a recent discussion in connection with Agricultural Banks the Survey and Settlement Commissioner who was a member of the Special Committee, admitted the necessity of Record of Land Rights for banking purposes. The Government has, therefore, been approached for reconsideration of the old proposal. We have no hesitation in supporting it. We would also suggest that all the *Khatedars' Pass Books* should also be revised and kept as suggested so that the full records may also be found of the transactions concerning the land entered therein.

The *Khatedars' Pass Books* should be revised.

231. It is true that there are numerous difficulties in introducing both the systems, that sub-divisions of land unrecognised to-day will have to be accepted, that the agencies that are expected to record the transactions would not be very efficient and that unscrupulous people would take advantage of the ignorance of the cultivators and that Pass Books would be lost and this would entail an amount of trouble and expense. All these and many other difficulties we thoroughly admit and appreciate but when we weigh them with the ultimate benefits, we have no hesitation in saying that our proposals will do much ultimate good. It will cost Government a little money in the beginning but the saving to the people from an efficient system of Agricultural Banking that would grow on it, would be very great. It will help the farmer and stimulate agricultural industry.

The Record of Land Rights will stimulate the Agricultural Industry.

232. We are, however, of opinion that the system of Record of Land Rights should not be introduced all over the State at once, until the results of the same in Sankheda and Padra Talukas, where it has been ordered to be introduced as an experimental measure, have been observed and noted.

Results in Sankheda and Padra should be noted before Record of Land Rights is introduced on a large scale.

(F). Agricultural Indebtedness.

233. Before we leave the subject of Agricultural Finance, we should like to discuss here the important question of agricultural indebtedness in the State. This problem has been receiving the attention of His Highness' Government ever since the memorable famine of 1899. As early as 1901, under the instructions from His Highness the Maharaja Saheb, a census of debts of the agriculturists was taken and suggestions for the relief of the indebtedness were invited. On the receipt of the suggestions, a Committee was appointed; but the work of preparing the final report could not be done owing to changes in the personnel. In 1911, it was entrusted to Mr. Manilal B. Nanavati and a report was submitted by him in 1912. In this report the whole question of Agricultural Indebtedness in the State has been exhaustively discussed in all its bearings along with the general economic condition of the people. We do not propose to go over the same ground over again; but we would confine our remarks only to the subject of the relief of the existing indebtedness, as it is an important problem and various suggestions have been made to the Committee for consideration.

234. Short of a regular census compelling every farmer to register his debts and every *Soukar* his loans to cultivators, with penalty for non-compliance, any attempt to get an estimate of the ryot's indebtedness is bound to be conjectural. For our present purposes, such a procedure, if not positively dangerous and impossible, is sure to be inconvenient. However, we may get some idea from the registration and other returns.

235. The following figures give the registered debts of the people for the last 12 years (vide Appendix XV for particulars):—

<p>The registered debts of the cultivators.</p> <p>Mortgages with possession</p> <p> " without "</p> <p>Money bonds</p>	<p>Rs. 5,61,42,568</p> <p> " 1,16,04,986</p> <p> " 16,69,935</p>
<p>Total registered debts for 12 years Rs. 6,94,17,489</p>	

Looking to the nature of seasons during this period it is not likely that more than one-third of this has been paid. However, to avoid all errors we may take that at least half of this still remains unpaid, i.e., Rs. 3,47,08,745. But this average is for the whole population. Looking to the fact that agriculture is the main industry and nearly 66 p. c. of the people are directly supported by it and that the rest of the people have either very few occasions or chances to borrow, we are justified in taking 75 p. c. of this amount as the farmer's registered debts, which comes to Rs. 2,60,31,309.

236. But this is not all. There is an amount of unsecured and unregistered debt. Most of the short-term loans are unsecured and every farmer has got these. Loans to the lower classes

are almost all personal. We may put all this personal debt as twice the amount of the secured.

					Rs.
Registered debt...	...	...	...	...	2,60,31,309
Unregistered debt	...	...	...	...	5,20,62,618
Total...	...	...	...	...	Rs. 7,80,93,927

There are Rs. 22,61,589 of Government arrears. All this brings the total to Rs. 8,03,55,516. This is the lowest estimate that can be formed. It does not include the debts shown in the sale documents, of the nature of conditional sale, which are getting common in some of the Districts. In 1912, the debts calculated on this basis amounted to Rs. 8,06,44,520. The average debt per head of a registered *Khatedar* is about Rs. 250. In the census of indebtedness taken in 1901, the total debts amounted to Rs. 7,57,17,190; and it was found that about 40 of the *Khatedars* had no debts. In this category may be included the non-cultivating *Khatedars* as well as the labourer cultivators who are not likely to incur large debts. It does not appear that the proportion of debt-free ryot is, in any way, large.

237. The problem of Agricultural Indebtedness is very complex and intricate and it is very difficult to find out the real causes and to assign to each contributory cause its proper share of the ryot's burden. However, they may be summarised as under:—

Causes of the Agricultural Indebtedness.

I. *Uneconomic holding of land*:—There is a large number of cultivators whose holdings of land are not sufficient to maintain them and agriculture, under present circumstances, is not a paying business in a majority of cases. These people hold from one to five bighas of land which, in ordinary times, could not support them. They sell their produce in advance and borrow grain and other requirements at a very high rate of interest. They are suffering from chronic indebtedness.

II. *Social Customs*:—The better class of cultivators, especially among the Patidars, have to borrow heavily for marriage and funeral expenses. In most cases, they have to spend beyond their means. Usually, they are thrifty and hard-working and conduct agriculture at a profit; but the social expenses involve them into debts and it is difficult for them to get out.

III. *Drink*:—So far as the Kaliparaj people are concerned drink ruins them. They own very rich land and usually get good produce but all that is frittered away in drink.

IV. *Famines, etc.*:—A part of the debts are due to frequent famines, cattle mortality and in a small way to the rigidity in the collection of land revenue, especially in Amreli where revenue is rather highly pitched.

There are many other causes of a very miscellaneous kind but they are not very important. Most of the debts grow from generation to generation and are never cleared.

A good amount of the debts must have been made also for productive purposes, purchase of land, seeds, sinking of wells, etc., and for which no complaint could be made. It is impossible to fix an exact proportion between productive and unproductive debts.

238. The best method of stopping indebtedness for unproductive purposes is to remove the predisposing causes; the holdings of land should be reconstituted on economic basis, and the uneconomic holders should be removed; by the introduction of co-operative banking the cultivators should be taught to be thrifty; they should also be educated so that their ignorance may be removed. Some of the expensive social customs may also be abolished, by means of legislation. All these subjects and many others which would tend to increase production and improve the general moral and material condition are discussed in the other part of the Report, and, therefore, we do not propose to treat them here. These are really constructive measures and it must take time before they have their full effect. What we propose, to discuss here are the methods of liquidating the burden of existing debts—specially that portion which is unfair and which carries a disproportionately high rate of interest, which keeps agriculture in a depressed condition. So long as this burden remains it is impossible for an agriculturist to make any progress; till then, he must remain as a serf to the *Soukar* and work for him for ever.

Apart from the measures that would increase production and thereby reduce chances for indebtedness, three distinct remedies have been suggested for the liquidation of the old debts. These are as under:—

- (1) Whole liquidation of debts by means of conciliation proceedings.
- (2) Passing of an Act similar to the Deccan Agriculturist Relief Act or the Punjab Land Alienation Act.
- (3) Slow liquidation through Banks or Co-operative Societies.

239. (1). It has been suggested to us by several witnesses that the State should liquidate the debts of the ryots and should find the necessary funds. This is a most preposterous proposal and can never be entertained. It is impossible for the State to find the necessary funds. How is the State to find eight crores of rupees? Even if the State were to pay off only the burdensome debts, it would be difficult to distinguish the burdensome from the unburdensome. There are a number of uneconomic holders whose debts it would be useless to redeem and even when once freed from their old debts, they would start incurring fresh debts. Supposing by some way the necessary funds were available and the debts paid back what is the guarantee that they would not be involved over again? This is, therefore, an impracticable method.

Government cannot liquidate all the debts.

240. Instead of paying the debts, even if debt conciliation proceedings were undertaken, as was done in the Central Provinces in the year 1899, and the indebtedness of the *Khatedars* inquired into by means of debt conciliation Committees, as if universal insolvency proceedings were started, and the debts reduced to payable amounts to be paid by instalments, the system would fail, as the *Sowkars* will be unwilling to submit to the procedure and would refuse to lend further sums to the *Khatedars*. For this reason, the Central Provinces procedure had failed and was never attempted over again. In the Baroda State, an attempt was made in 1905 to introduce such a measure but was rejected by the Government. It is our firm opinion that no conciliation of debts can be successful unless a thorough system of Agricultural Banking is introduced. Even then, wholesale liquidation would never succeed. There are a number of uneconomic holders whom it would never pay to redeem wholesale; they would ever remain deep in debts and no Bank can safely advance loans to them. They are again thrifless, and improvident and no amount of help would save them. The redemption of debts must proceed side by side with the development of character and certain economic virtues of thrift and prudence, and these could not be breathed by means of wholesale conciliation or debt redemption proceedings. To undertake such a huge task is waste of time, money and energy and it would result in the disturbance of the whole business organisation of the Society to the detriment of the very people for whose benefit they may be started.

241. (II) The second method of liquidation of debts through the ordinary legal proceedings is better even though it has dangers of its own. In this connection in British India, two important measures have been passed: (1) the Deccan Agriculturist Relief Act and (2) the Punjab Land Alienation Act.

The principle underlying both the Acts is twofold (a) to stop alienation of land from agriculturist to non-agriculturist by placing certain restrictions and (b) to settle the money claim by means of a special method of making up the accounts.

242. For a long time, it was thought that the phenomenon of Agricultural Indebtedness was the result of the Legislation which permitted free commerce in land and thus gave full opportunities to money-lenders to advance loans against its security and the enforcement of the claims by means of the Court. This privilege, it was thought, was unsuited to a backward population and, therefore, should be withdrawn or curtailed. In the beginning, decrees against land were executed through the Collectors and arrangement was made for the liquidation of the claim by the management of the land for a definite period. In about 1875, following upon agricultural distress, peasant riots took place in the Deccan and some of the *Sowkars* were looted and the

money bonds destroyed. The British Government, therefore, felt the necessity of taking strong measures and in 1879 the Deccan Agriculturist Relief Act was passed. Its operation, at that time, was confined to the four Deccan Districts where the distress was observed and in 1905 the Act was applied to the whole of the Bombay Presidency.

“The object of the Act as stated in the preamble has to relieve the agricultural classes in certain parts of the Deccan from indebtedness, and, as stated in the “Objects and Reasons,” to “put the relations between agriculturists and money-lenders on a better footing.” The “Statement of Objects and Reasons” proceeded to formulate the methods by which this result was to be attained, as follows:—

Operation of the various measures included in the Act.

- (1) by the provision of safeguards against money-lenders committing frauds in their accounts and obtaining from ignorant peasants bonds for larger amounts than are actually paid to, and due from, them;
- (2) by arranging disputes by conciliation as far as possible;
- (3) by requiring the Courts in contested suits against agriculturists to investigate the entire history of the transactions between the parties, and do substantial justice between them;
- (4) by restricting the sale of the ryot's lands in execution of a decree and by providing an insolvency procedure more liberal to the debtor than that of the Code of Civil Procedure. The principal safeguards against frauds by money lenders referred to in (1) above were—
 - (a) the appointment of village registrars before whom every written obligation for the payment of money should be registered; and
 - (b) the provisions requiring money-lenders to give receipts to agriculturists for all payments made by them; to render accounts, and to give the agriculturist client a pass-book.”

243. In 1912, a Commission was appointed to inquire into the working of the Act. The findings of the Commission may be quoted in its own words.

Appointment of a Commission to watch the progress of the Deccan Agriculturist Relief Act.

“Of the above-stated methods by which the objects of the Act were to be attained, all except those consisting in action by the Courts have admittedly failed. Village registrars were found to be hopelessly corrupt; the writing of documents by them or under their superintendence and the payment of consideration

All except action by the Courts ineffective.

in their presence were found to constitute no safeguards whatever to the agriculturist, and Government, while not repealing the sections of the Act providing for registration by them, have in effect rendered them inoperative by ceasing to make appointments; the provision regarding receipts and accounts have remained a dead letter; conciliation, where the system is in force, has not been a success; and the insolvency procedure provided by the Act has never been utilised. Thus the high hope entertained of the advantages to accrue to agriculturists from these subsidiary measures have not been fulfilled, and the only really effective part of the Act has been that pertaining to the work of the Courts. It is to this part of the Act that we refer below in describing its results."

"8. It is important to discriminate carefully between the immediate effects of the Act, when first applied to any part of the Presidency, and the after-effect. The immediate effect was greatly to improve the position of the agriculturist. Under the provisions empowering the Court to investigate the past history of his debts, to reduce exorbitant interest, to disallow compound interest, to set aside previous settlements and adjustments, and to fix instalments for the payment of what should be found due, the agriculturist found himself freed from a position which was in some cases almost hopeless, and either relieved of debt altogether or placed in a position in which he has every hope of paying it off. Again, under the redemption clauses, he regained possession of land which he had mortgaged up to the full value and which would otherwise 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 provisions of law which he had not foreseen and which were brought to bear on his past transactions. In this process, while the Courts 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 have to prove them. The agriculturists were naturally delighted with a law which freed them from debt and restored to them their land and the *Sowkars* were correspondingly depressed. Then came the after-effect, which was profoundly to alter the relations between creditor and debtor, to drive the best of the *Sowkars* out of a business which has 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, or permanent, effects that we are now principally concerned, and on these that it

Necessity for discrimination between immediate and after-effects of the action of the Courts.

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 to which it was first applied and for a few years only in the rest of the Presidency. Thus its immediate and later results 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 debts cut down and land redeemed, it has lost some of its charm now that they realise that it restricts their credit and disadvantageously affects the terms on which the money-lender is willing to make advances.

“18. To summarise our conclusions as to the result of the present administration of the Act:—
Summary of conclusions regarding the administration of the Act by the Courts.

It is 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 *Sowkar* and honest cultivator 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.”

The whole Act is going to be revised in light of the Commission's Report. The new legislation should have been introduced long ago; but as it is likely to be of a very controversial nature it has been postponed till after the War.

244. The Punjab Land Alienation Bill though based on the same principles was undertaken on a slightly different consideration. The Punjab is a land of the fighting races whose main occupation is agriculture. A part of the land was passing into the hands of the non-agriculturist money-lenders and some measure was found necessary to check the tendency in the interest of the general peace of the country and the prosperity of the ryots.

245. We may summarise the principal causes. There are two kinds of alienations:—(I) Permanent and (II) temporary, and the Act regulates these. “To every permanent alienation of agricultural land the sanction of a Revenue Officer is made necessary by clause 3 of the Bill. Such sanction is to be given, as a matter of right, where the alienor is not a member of the agricultural tribe, or where a member of an agricultural tribe alienates to an agriculturist in the same village, or to another mem-

ber 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."

246. Temporary alienations by a member of an agricultural tribe must be made in any one of the following forms when the mortgage is not a member of the same tribe or of a tribe in the same group:—

Temporary alienations.

- (1) Usufructuary mortgage with a maximum period of 20 years.
- (2) Mortgage without possession subject to the condition that if the mortgagor fails to observe the contract terms, the mortgage to be treated as a usufructuary mortgage as in (1).
- (3) Usufructuary mortgage, mortgagor retaining the land and recognising the mortgagee as a land-lord and paying a fixed rent.

Leases of agricultural land are also prohibited except for a term of 20 years as also all contracts of the nature of mortgages with conditional sale. Hypothecation of the produce of the land is allowed only for one year. No land belonging to a member of an agricultural tribe can be sold in execution of any decree or order of any Civil or Revenue Court.

247. It will be seen from this that permanent alienations of agricultural land to non-agriculturists are completely prohibited and if in execution of a decree, land of a farmer is required to be sold only temporary mortgage or alienation for a maximum period of 20 years is allowed.

Restrictions on permanent alienations.

248. The result of the working of the Act has been very recently summarised by Mr. N. Calvert, I.C.S., in the Bengal Economic Journal, Vol. II., No. 3, P. 329.

Result of the working of the Punjab Land Alienation Act.

"The Act caused no undue contraction of credit. 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 1906-07 and has since steadily continued to rise until it is now well over Rs. 200, confining attention to cultivated acres only. The average area sold in the five years preceding the Act was 162,000; for the next five years (1901-02 to 1905-06) it dropped to 135,000; in the next period (1906-07 to 1910-11) it fell further to 121,000. Since then, it has risen and for the period 1911-12 to 1915-16 the average area sold was 140,000 acres. This increase is due to large sales of land by Government in the canal colonies and does not indicate that there is any tendency for agriculturists to part more freely with their

land. The following figures show that these tribes are now actually regaining land:—

AVERAGE AREA SOLD IN ACRES.

Period.	By Agricultural Tribes.	To Agricultural Tribes.	Gain or Loss.
1902-03 to 1905-06 ...	150,000	149,000	—1,000
1906-07 to 1910-11 ..	170,000	178,000	8,000
1911-12 to 1915-16 ...	188,000	217,000	29,000
1916-17	183,000	203,000	20,000

(The figures relate to the Province as at present constituted. The figures given in the text for the five years prior to the passing of the Act also relate to the area now included in the Punjab).

“The figures for mortgages are also very striking. The average area of cultivated land mortgaged annually during the five years preceding the Act (1896-97 to 1900-01) in the area now included in the Punjab was 339,000 acres. The annual average for the three succeeding quinquennial periods was 180,000, 211,000 and 226,000 acres respectively. But these figures are misleading and the result of the Act is more accurately shown in the following table (the figures of which include both cultivated and non-cultivated area):—

Period.	Area Mortgaged by Agricultural Tribes.	Area Redeemed by Agricultural Tribes.	Area Mortgaged to Agricultural Tribes.
1902-03 to 1905-06 ...	190,000	178,000	162,000
1906-07 to 1910-11 ..	240,000	296,000	219,000
1911-12 to 1915-16 ...	264,000	270,000	238,000
1916-17	246,000	199,000	220,000

The figures show clearly that agricultural tribes are gaining by redemption and mortgage far more than they are losing by mortgage. The average mortgage money per acre has increased from Rs. 61 per cultivated

acre in 1900-01 to Rs. 106 in 1916-17. The actual total cultivated area under usufructuary mortgage is slowly declining from 3,287,000 acres in 1901-02 to 3,200,000 in 1916-17; the area owned by agricultural tribes and mortgaged must have decreased still more. The percentage of the mortgaged cultivated area to total cultivated area has declined from 12·3 to 11·5 in the period named. The District figures show improvement in the most encumbered tracts and retrogression in some of those previously more free. Thus:—

District.	Percentage of total cultivated Area mortgaged.	
	1900-01.	1916-17.
Gurdaspur	25·5	20·9
Sialkot	25·1	23·5
Mooltan	17·7	10·1
Amritsar	17·0	16·3
Gujrat	16·1	12·4
Kangre	16·2	12·9
Rohtak	10·	12·3
Gujaranwalla	10·	7·1
Jhenm	9·	7·7
Karnal	7·	8·4
Hissar	5·6	8·
Jhang	4·2	10·4

The explanation of this curious variation appears to be that in the early days of British rule, as already mentioned, the money-lender was most active in the more prosperous districts; prosperity was the source of temptation. With the passing of the Land Alienation Act this same prosperity has enabled the agricultural tribes to retrieve their former position. In the poorer tracts the land was of little value, crops were precarious and hence the money-lender was less active until the all round rise of prices gave him security. Rohtak, Hissar and Karnal belonged to the old Delhi division where the conditional safe mortgage was most common and the rise may be due to the conversion of these into usufructuary mortgages under the Act."

"To sum up; we may quote the words of the Lieutenant-Governor that 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 Zemindar.' But it must be remembered that the measure was directed against and has not remedied the abuse of rural credit;

it aimed at removing one important result of this abuse. Rural indebtedness is probably heavier than before and the unscrupulous usurer who lends for extravagance continue to receive from the Courts the same help and sympathy which is the due of the city banker with a long reputation for sound and honest business who lends only on good security for a good productive purpose. The time appears to be ripe for a measure imposing on the civil courts the exercise of a proper economic function. Until all concerned are fully impressed with the need for building up a sound system of credit, the present abuses will continue; trade and commerce will languish; industries will not flourish; prices will remain unduly high and the preventible wastage will continue to drain away the capital of the province. To illustrate this wastage we may mention that in the last ten years the civil courts of the province have been called upon to realise money decrees to the total value of eighteen crores of rupees and have actually realised less than five crores."

249. While judging of the effects of the Act there are a few factors that have to be taken into consideration. The Punjab has been passing, since the last 20 years, through a wave of prosperity brought about by several causes. During this period many miles of railways have been built and the canal system for irrigation has been extensively introduced. The emigration from the Province has brought in a large amount of outside wealth. From the large share capital subscribed by the Co-operative Societies and the enormous deposits received by them it appears that the country is prosperous and the large redemption of debts and mortgages that have been reported may be due to this than to the operation of the Act.

Effect of the legislation in British India.

From the above, it will be seen that the Deccan Agriculturist Relief Act has been considered as a great failure while the Punjab Act has been considered to be a great success.

250. The Deccan Act adjudicates debts by means of the Section 13 (A), which opens the old transactions and settles the account on the basis of simple interest calculated at a very low rate of interest; that is, it imports a new term in the contract and imports it without any discrimination between an honest or dishonest creditor. It has driven away honest money-lenders and materially curtailed the credit of the cultivator, with no corresponding benefit. From the opinion of the Commission, we are led to believe that it is unnecessary to enact any legislation of the kind of the Deccan Agriculturist Relief Act for Baroda. Instead, it would be better to amend the Section 174/(C) of our Civil Procedure Code and make it more definite. The Courts must see the past accounts and see if the Interest Act has in any way been infringed upon.

Section 174/(C) of the Civil Procedure Code should be amended.

251. As for the appointment of Village Munsiffs, the system **Village Munsiffs.** has intensely failed in British India, and has been abolished. Similar appointments have been made in Baroda and there are only three who are working at present. In 1917-18, they decided 161 suits of the total value of over Rs. 3,600. It does not appear that they are very popular. It is difficult to get good men. It does not appear that adequate care is taken in the selection of the men. If a few but honest and respectable men are selected and if their work is properly supervised they may be able to settle claims amicably and in justice to both the parties.

252. The Punjab Act is intended to restrict the alienation of land to non-agriculturists. Let us see the existing conditions regarding the transfer of land. **Restriction of the alienation of land to non-agriculturists is not necessary.**

The question may be seen from two points: (1) from the transfer of land to the non-cultivating *Khatedar* and (2) to the non-agriculturist *Khatedar*. A cultivator may be an agriculturist but he may not cultivate his own land. This distinction should, therefore, be borne in mind while reading these statements. Between 1905-06 and 1916-17 about 822,800 bighas were brought under cultivation out of which five lakhs are with the *bona fide* cultivators while nearly two lakhs are with the non-cultivating *Khatedars*; while during the last eight years 84,207 bighas were transferred from the agriculturist to non-agriculturist *Khatedars* or an average of ten thousand bighas a year. From the statement given in para. 41, it appears that there is no sudden rise in the transfer. Looking to the enormous acquisition of new land by the cultivators—538,348 bighas—their loss by transfer during the last eight years of 84,207 is very small and is not such as to require special restrictions on transfer of land and thus indirectly check borrowing. There are a number of cultivators who are on the margin of poverty and in the continuous change some are leaving agriculture or are disappearing as cultivators and their land is passing into the hands of the *Soukars*. So long as the land distribution remains as it is it is impossible to check the tendency. We do not, therefore, propose that any special measure is needed for the present of the nature of the Punjab Act. However, the tendency should be closely watched and if at any time a larger amount of land is seen passing into the hands of the *Soukars* some restrictive legislation may be undertaken.

253. The necessity for introducing some measure that would help the liquidation of the old debts of the *Soukars* or reduce them to the payable basis was very strongly brought to the notice of the Committee in the Amreli District specially in the Amreli Taluka. The Taluka has been suffering from frequent famines during the last 20 years and it had for a long time huge arrears of the Government Land Revenue—at one time aggregating to the extent of three times the ordinary assessment. The people have also heavy debts to the *Soukars* who have

Heavy debts of the Agriculturists in the Amreli Taluka.

been charging very high rate of interest and are also insisting upon mortgages with conditional sales. Their land is also passing into the hands of the money-lenders. All these facts were brought to our notice and it was suggested that some special procedure should be laid down by which the money transactions may be looked into and some relief may be given.

254. To this problem we have given our special attention.

Some remission should be granted to the Amreli Taluka, this year.

We do not believe that any useful purpose would be served by passing any restrictive measures. The cultivators of Amreli are very intelligent and hard-working; they have had the benefit of the Compulsory Education Act for a long time. Therefore, the *Sowkar* has not taken any mean advantage of their ignorance. To our mind, the Taluka is unfortunate in so far as the seasons were bad and there were huge arrears of Government revenue. These arrears were allowed to accumulate for a long period. At the harvest time, there was a regular competition between the *Khedut* and the Government and the *Sowkar* for the possession of the crop. In this struggle, poor *Khedut* had to suffer. Luckily, the last four years were fairly good and most of the Government arrears have been cleared. Unfortunately, the present year is bad and it appears that the suspensions of Land Revenue that will be given will create Government arrears and the struggle with the *Sowkars* will grow. We would, therefore, recommend that the best course for the Government to deal with the Taluka is to give it some sort of remission of land revenue. The Taluka has not received any remission so far and if some is granted it would help the people to improve their condition. It would be suicidal to allow the sturdy class of *Paśidars* to continue the unequal struggle. Already the *Sowkar* is dictating hard terms and it would not pay the cultivator to displease him. Restrictive legislation may help him in the beginning but ultimately the cultivator would be worse off than before. What we recommend, therefore, is a liberal land policy towards this benighted Taluka of the State.

255. The best method in the opinion of the Committee for

Liquidation of debts through the Co-operative Societies is the best method.

the liquidation of the old debts of the *Kheduts* would be to utilize the Co-operative Societies. The Societies know the condition of the members and the members are jointly and severally responsible. Therefore, they would be careful in selecting cases for redemption. During the last seven years, Rs. 3,67,593 were advanced by the Societies for the redemption of debts. In the Amreli Taluka also, last year, the old debts of the members of two Societies of some standing were paid back and good relief was given. This system can be extended to other Societies—Societies that show good work and co-operative spirit, Societies of some standing.

Therefore, on all consideration, we believe that the best method of dealing with the old debts is through the Co-operative Societies. More Co-operative Societies should be started and their

working should be improved and the arrangement should be made for the provision of funds for a long period for the liquidation of the debts of successful Societies. We have no faith in other remedies.

(G). RURAL PROBLEMS.

1. Social and Economic Surveys.

256. The most important economic problem in the State is rural. In the other sections of this Report we have discussed the most important problems connected therewith—of Education, of Sanitation and of Agriculture. In this section, we propose to discuss certain topics connected with the village life in general.

A Department of Social and Economic Surveys must be organised.

The first necessity is to know the rural problem itself. Unless we thoroughly know it, it is difficult to find the remedy and apply it. Therefore, we propose that the newly created Department of Statistics should be asked to undertake the following:—

1. To make Sociological Surveys of typical villages in the different areas of the State. This survey should be comprehensive without being technical. It should make inquiries into the general agricultural practices and the social communal life of the people. "Every thorough survey should be the fore-runner of new ideals for the communities and for the new points of crystallisation of local effort. It should make new paths."
2. To collect Statistics. At present, proper care is not taken in the collection of Statistics. Most of the Agricultural Statistics are collected by the Talatis, but they are not checked or verified. Some more statistics are also required to fully understand the economic condition of the people.
3. To study very critically the general economic condition of the people and the changes that are being effected therein by the operation of the various world forces.
4. To study the effects of various legislations that have been passed by the Government for the social and economic benefits of the people.
5. To publish in the Gujarati language monograms on the various studies recommended above for the information of the people.

These investigations will be over and above the inquiries that may have to be made by the various Departments of the State for their own immediate purposes.

Already some useful work has been done by the Department of Commerce and Industry by the publication of several mono-

grams—on the Agricultural Indebtedness in the State, Sociological Survey of the Servants of the Khangi Department, Guilds and Crafts and Old Age Pension and some more monograms are under preparation. But this is not enough. It is not possible for the Department to devote proper time to this work without detriment to its legitimate duties.

There is enough scope for work for a full-time Officer. In Europe and America, various agencies—State Departments, Universities and private bodies—are interested in such investigations. Unfortunately, no such work is done in India. The Governments are interested in these inquiries but they are conducted in a very narrow spirit and to meet their immediate requirements. The Colleges and Universities have not made any arrangements though signs are visible that they might take up the work in the future. There are no private bodies or associations that are doing any investigations. Therefore, it is the duty of the State to organise a Department of the nature suggested above and to give effect to the recommendations made.

2. The Training of Local Leaders.

257. Rural problem is a very difficult and a complicated one and the ultimate solution must depend upon the local leaders—their intelligence and their enthusiasm. After all, they

Necessity of training the local leaders.

must work out the different suggestions that may be made. It is by legislation also that we might effect improvements. If we have intelligent and sympathetic leaders in villages, they can do immense work in stimulating interest among the cultivators. Therefore, special attention should be paid to the training of local leaders. There is enough genius among the people but for want of opportunities and sympathetic guidance it is left in obscurity or its energies are misdirected. It is the principal business of the Government to find out the right type of men and train them.

258. Since the last several years, many measures have been introduced by which the village people get some opportunities for being useful to their own people. By the introduction of the co-operative movement several men from the villages have received some training and have done useful work. Since the creation of the Local Boards and the Panchayats, several men have got opportunities for useful activities. But most of the leaders of the villages—specially the members of the Village Panchayats—are still ignorant and hardly know anything of their duties; and therefore, they cannot make any influence on village life problems. It has been the experience of the world that the farming community can never be influenced by the creation of mere institutions; the best way to approach it is through individuals, by personal communications and by good example of the local leaders. That is the reason why most of the Village Panchayats have remained

Methods of training the local leaders.

inactive without any initiative. If simultaneously with the introduction of the Village Panchayat Rules, a special Officer had been appointed to teach the people the principles and the methods of working them, probably by this time, we should have done a great work in the solution of some of the village problems. We, therefore, propose that special efforts should be made to train local leaders. We propose the following methods:—

- (a) That a special class may be opened at each District Head-Quarters every year where provision may be made for the training of local leaders in the village problems.
- (b) In this class lectures may be given for ten days in the following subjects:—
 - (1) Local Self-Government and Village Panchayats;
 - (2) Co-operation;
 - (3) Principles of Agriculture;
 - (4) Home Hygiene;
 - (5) Sanitation;
 - (6) Village Libraries;
 - (7) Social Legislation; and
 - (8) Village Life Problems in general.

These lectures may be arranged by the Departments concerned. They may also be accompanied by practical and visual demonstrations.

- (c) For each class, 50 men may be selected, four or five from each Taluka. The men may be selected in co-operation with the local authorities. They must be village leaders but practical agriculturists, the real sons of the soil, not the class of men who hang about the Offices and the Law Courts. They should be called at Government expense.
- (d) Social service organisations may be encouraged to co-operate and undertake training of leaders by making grants, if necessary; also Panchayats may be induced to contribute towards expenses.

259. If we continue this system for ten years, we would get about 2,000 men from different villages; they would have thoroughly understood the principles of various measures adopted

by Government for village welfare and would heartily co-operate with the different Departments of the State, and make their work easy. Each of these men would serve as a local agent and through him the villages may be approached for all development work. The function of this class may be limited at present; by and by they may grow as we gather more experience. In this connection we draw the attention of the Government to the Chautauqua Institute of the United States of America (*vide* Appendix XVI). It is a sort of people's University that has grown from small begin-

ning in Bible teaching to the teaching of various subjects. It has a town of its own where annually more than 50,000 persons come and take advantage of the courses and lectures. If we really want the people to take full advantage of the various progressive measures introduced by the State we must take steps to train them for development work. It is impossible to settle details of these classes at present, but they can be worked out by the Officers in charge of the Departments concerned sitting together.

3. Social Customs.

260. Some of the social customs, especially those prevailing among some sections of the farming community are decidedly harmful to the economic interests. Some of them were formed when society was in a very backward condition and when life was arranged to meet the deficit economy. Some of the conditions have changed; all the same, the old customs have remained. In all backward Societies generally feasts are given to neighbours and relatives and the same custom prevails in our farming community. These expenses may be regarded as one of the causes of their growing agricultural indebtedness. The expenses incurred are very heavy and in some cases are beyond the capacity of the cultivator. During the last 30 years, several attempts have been made through caste organisation to stop or reduce them, but with no result. There is a growing demand from the farmers themselves as may be seen from the unanimous resolution passed at the last Panchayat Parishad that the State should undertake legislation to prohibit them. The resolution was submitted to His Highness but orders have been received that in such matters the people themselves should take the initiative. We hope that some member of the Legislative Council would take up the question and introduce a Bill. Several witnesses before us have expressed a desire that the State should undertake legislation in the matter.

261. Another difficulty in the social life of the people which imposes a great economic loss on the cultivators—especially in certain districts of Kanam and Charotar—is the scarcity of brides. Among all the better classes of cultivators the prevailing custom is to marry girls in other village claiming a superior social status. To the bride-grooms from these villages of higher social status the girl's father has to give a large dowry and incur heavy marriage expenses. The result of this is that the boys of the backward villages, lower in social scale, find it difficult to get brides and when they get them, they have to pay a very heavy bride-price. There are hundreds of men who never get a chance to marry and one can well realise the difficulty of the cultivator who is unmarried. The cultivator cannot carry on agriculture without a wife. This custom of hypergamy leads to indebtedness and to a

great economic loss. We realise this defect in the social organisation but we do not see our way to recommend remedies. This is the people's problem and they must solve it. In some villages, caste associations have been started and they have restricted marriages outside the group but the associations are few and not very powerful. The ultimate solution of the problem will depend upon the enlightenment and culture of the people in the backward villages and State efforts are being directed in that way. This is a slow remedy and we will have to rest content with it.

4. Rural Life and Woman.

262. Schools have been in the villages for the training of girls. This training is very elementary and hardly gives any instruction beyond the three R's. The girls, after they leave the schools, hardly get an opportunity for further training or instruction nor do they get chances for freely travelling about and getting experiences of the world. Most of their life is spent in villages among surroundings which are depressing and their life is nothing but a round of drudgery. They have their social life, and the various religious holidays give them some enjoyments. But their life is sunk in superstition and they are ignorant of the elementary principles of domestic science and art. Since so many agencies have been created for the training of men, we do feel the necessity of creating an institution from which trained female teachers may be sent to the villages for the instruction of the women in domestic science. As a beginning, a careful study may be made of their mode of living and the improvements therein may be worked out. The success of the suggestions will depend upon their usefulness and their adaptability to local conditions. Under the existing circumstances, no costly improvements should be introduced. The people have no money to spend on them. But if the new methods be within the reach of the ordinary people we may expect them to adopt them. As for example the dairy industry is entirely a woman's industry and she may be shown better methods.

In the beginning half a dozen female teachers may be trained and sent out with the necessary equipment.

263. Woman is a great economic factor in the life of a cultivator and his efficiency depends upon her intelligence and capacity to a very great extent. Therefore, any money that may be spent for the enlightenment of woman will be well repaid by the improvement of the life of the people.

5. Drink.

264. Drink is one of the most important social evils and is ruining the industrial efficiency of the people, specially of the backward agricultural classes in the State who form a great majority. This evil appears most among

The supply of drink should be gradually stopped.

the Dhankas and other Kaliparaj races, who, in spite of the fact that they have got fertile soil and a steady rainfall, are being ruined by the habit and are going under the clutches of the *Sowkars*. It is true that the State is trying to raise duty on liquor and reduce the number of shops; all the same, the temptation is there. Although our first thought would be to suggest the State going bone dry, we see the impracticability of it owing to the intersperseness of foreign territory all over where the shops would be going all the same and the people would get a chance to get drunk. The best remedy for the present would be to reduce still more the number of shops—specially in places where the State territory is compact—and to open negotiations with the other States round about for the adoption of a well laid-down policy for the total abolition. This would certainly reduce the State revenue; but we venture to recommend that any sacrifice in this direction would materially increase the moral and material development of the people, for which His Highness the Maharaja Saheb is working so hard and incessantly.

6. Organisation of Rural Life.

265. There are two agencies that are specially working in the State for the organisation and development of village life. They are the Departments of Co-operation and Local Self-Government. There are other Departments that are working towards the same end, the Departments of Education, Agriculture and Sanitation; but their interest is not very direct. The Co-operative Department is creating an agency that would handle better business, better farming and better living but its methods are slow though sure. However, there is one Department—Department of Local Self-Government, which is most intimately connected with the village life in general and village administration in particular. If the Village Panchayats are strong and work intelligently with a sense of responsibility they are capable of doing immense good. But, in their present stage of existence, out of 2,200 hardly a hundred Panchayats are doing any good work. Most of the Panchayats work only in name. The members do not know the Panchayat Act and the functions of the body. Since the passing of the Act no conscious effort has been made to train the people in their work except in a very small way and that, too, very recently. The Village Panchayats are set up as a sort of decentralised body for the administration of certain Revenue rules. These functions should be exercised by them as they are of great help to them. But these need not end with them. The functions of the Village Panchayat should be to develop the whole village life, to improve its sanitation, to beautify it and to make it peaceful, pleasant and full of live interest. Most of the villages are dirty and the life in them humdrum and is a life of drudgery. Some of the old and really

Most of the Panchayats
work only in name.
They must try for the
good of the village.

oriental customs are dying out. The celebration of the holidays have lost their zest, purity and social coherence. The old village races, *melas*, and festivals are dead or are dying out and in their absence the people flock to towns for what little enjoyments they could get. The attractions and celebration of these holidays have disappeared and where a few remain are rather vulgar and insipid. They used to exercise a great socialising effect on the population both male and female. The breaking of the old institution was due to the conflict of western and eastern ideals and the unconscious dislike of the educated class for their old customs whose significance they did not thoroughly realise before they condemned them in their over enthusiasm for the so-called European culture. Since last few years a reversion of feeling has taken place and writers have appeared who have written a good deal on the significance of Hindu culture and institutions and some of the leaders are trying to revive the old customs and institutions. However, as yet, no conscious and well-considered efforts have been made by any body. Life is not intended for mere drudgery, for the caring of rupees, annas and pies and the maintenance of the body in a certain state of physical efficiency. It must have its own joys and pleasures—pleasures that would ultimately increase the industrial efficiency of the people and remove the dullness of life.

266. We, therefore, suggest that the Department of Local

The Department of Local Boards should be remodelled to develop the village life.

Boards should be remodelled and its functions should be increased. It must concern itself not only with the village administration but with the village life as a whole. It may assist the other specialised Departments of Co-operation, Sanitation, Agriculture and Education in solving their problems. The Department must be concerned with the social, economic, and the administrative problems of the village. It must try to develop the whole life. In order that this work may be well done, it should be placed in charge of a highly cultured Indian who understands thoroughly the Indian life and who has some experience of the village people and administration. The Department should make careful inquiries and train men as Honorary Organisers from among the people and employ some good inspectors as organisers of village life. They should instruct the people and the Panchayats and help them to carry out the Department's programme and ideas. A Department well organised on these lines can do immense good to the people in remodelling the village life on an improved basis. Old Hindu life was full of rich idealism, which has mostly departed and it is our duty to restore and revise it. There is an immense scope for national service in this direction. By undertaking this measure, His Highness will be setting a great example before the rest of the country. It is true that Governments are seldom concerned with the social development of the people, in a sense, that is understood in India; but that should not come in the way of the adoption of such a step in an Indian State with the present Maharaja at its head who has already broken several absurd traditions in administration.

(H.) MISCELLANEOUS TOPICS.

1. *Land Revenue and Collection*:—

267. As Land Revenue System has a good deal to do with the economic condition of the people several witnesses were questioned as to the burdensomeness of the land-tax. A few witnesses suggested that instead of the assessment at the end of 30 years, it should be fixed permanently so that the cultivators may be induced to make costly improvements. This suggestion we do not think practicable. Firstly, we do not believe that the cultivators are, in any way, discouraged from making permanent and costly improvements in land because of the present system. If we look at the number of new wells sunk during the last 20 years and the costly instalments of oil-engines and pumps set up during the last 15 years we are led to believe that the present system does not discourage improvement. During the period of the Settlement, no enhancement of the assessment is made. It is, moreover, a settled State policy that no improvements made by the people by their own efforts should be taxed. We can never conceive of a cultivator who would be stopped from improving his land because in some distant future he may have to pay a slightly higher rate of assessment. Secondly, the whole agricultural industry is undergoing a change. The State is spending an enormous amount of money on improvements of all sorts. Therefore, it must ultimately participate in the benefits or in the increased prosperity of the people and get more money from taxation to be utilised for the moral and material prosperity of the country. To curtail the sources of taxation is to stop all further progress through the medium of the State which represents an organised institution of the people. Moreover, at the time of the revision of the assessment, the capacity of the people is always inquired into and there are as many chances of increasing the assessment as are for decreasing the same if the conditions so warrant. We, therefore, are of opinion that the suggestion of making a permanent Land Revenue Settlement is impracticable.

268. But there are one or two questions in connection with the collection of the Land Revenue that we think should be brought to the notice of the Government.

Some objection has been raised to the inelasticity of the Land Revenue instalments, especially, in Naosari. Sometimes, the crop seasons are early and sometimes they are late and, therefore, it becomes difficult for the cultivators to pay the instalments out of the produce and they are compelled to go to the *Sowkars* and borrow money at a high rate of interest or sell their produce in advance at a very cheap rate. The Suba is permitted to change the date of payment but he must issue a *Jaherat* in the *Adnya Patrika* before six months. It is impossible for any body to judge the character of a season six months previously. Therefore, full

Permanent Land Revenue Settlement is impracticable.

The Subas must be vested with powers to change the date of payment of the Land Revenue.

powers must be given to the Suba to change the date of payment as may be found necessary from the nature of the agricultural season.

269. The second point in the Land Revenue Collection is that sometimes a large amount of land revenue arrears are allowed to accumulate and are written off only when they become absolutely irrecoverable. Large accumulations of the Government arrears exercise a great demoralising effect upon the people. Since the Government, in such cases, is always ready to attach the crop as a precautionary measure, there is always a scramble for the possession of the produce between the *Khedut* and the *Sowkar*. Every effort is made to cheat the Government by bribing the village officials. The *Sowkars* are always uneasy and unwilling to lend money. The cultivators always lose heart as they are not sure of reaping the full benefit of their labour. Such a condition was observed in the Amreli Taluka, for several years where the arrears for a time amounted to more than twice the ordinary land revenue demand. It is true, that a great part of the arrears are collected in several years and after a great deal of trouble and only a very small part has to be written off in the end. But, if we realise the cost to the people and the moral degradation arising therefrom, no statesman would ever care to realise them. We thoroughly understand the principle of the Land Revenue System and the people cannot, as a matter of 'right,' claim remission; but when we realise the practical effect of the policy we feel that a merely theoretical consideration should not stand in the way. Its immediate effect on the people must be looked into. Since the people have to live on their land they will pay the arrears anyhow but the cost must be tremendous. We, therefore, propose that a more liberal policy should be adopted and remissions should be given at the proper time. Large arrears of Land Revenue should not be allowed to accumulate.

Remission should be given at the proper time.

2. Irrigation:—

270. A part of the State's territories are liable to failures of rains and, therefore, the question of the conservation of the water-supply is very vital. As indicated previously, various measures have been undertaken by His Highness' Government to increase irrigation facilities. Various irrigation tanks have been constructed and improved at a cost of 35 lacs of rupees and large Tagavi advances have been granted for the construction of *Pacca* and *Katcha* wells. The result has been so far good, specially when we see the increase in the number of these from 69,829 in 1900 to 78,454 in 1916-17. In 1906-07, the total area under irrigation was 1,96,485 bighas, or 3.1 per cent. of the land under cultivation while 1916-17 there were 3,05,156 bighas or 4.8 per cent.

271. We do feel, however, that some measures should be undertaken to extend the present irrigation facilities. The Irrigation Department is doing what it can to construct more canals and tanks and a survey of the possible sites

Steps should be taken to increase the irrigation facilities.

has also been made. We know that the Department is doing its utmost but we may suggest that the possibility of bunding some of the Gujarat rivers may be investigated. Measures may also be taken to extend the irrigation by wells and we suggest the following steps to be taken:—

- (a) Long term Tagavi loans may be given to the cultivators for construction of *Katcha* and *Pacca* wells as well as for boring of wells. Tagavi may also be given for installation of oil-engines and pumps. Tagavi for these purposes should be freely and extensively given and every encouragement should be given to take it. We understand that a sum of 3 lacs is annually provided in the Revenue Department Budget for this purpose and we suggest that orders may be issued to see that it is fully utilized. A sum of about ten lacs of rupees, set aside for the purpose, would be sufficient.
- (b) In special areas, the Government of itself should sink trial wells and make borings to determine the quality and the quantity of water.

This assistance to the people could be well-extended and would bear immediate results. In view of certain risks that the people are taking, we recommend that no interest should be charged on the Tagavi for boring. After all, the loss in interest would be extremely small and ultimate benefit to the country would be enormous.

3. *Famine*:—

272. There are limitations to the extension of irrigation and when the rains fail, certain amount of distress is bound to appear, among men and cattle, so long as the distribution of the land remains as it is at present. The severity of the distress will, however, depend upon the nature of the season, depending upon the total or partial failure of crops. To relieve the distress, a Famine Code has been framed. It is very comprehensive and we have hardly anything to suggest for its improvement. The people, too, have thoroughly understood their own responsibility and they arrange affairs as best as they can. However, there are certain directions in which both the people and the State can co-operate and relieve distress or mitigate the effects of famine.

273. *Man*:—For the relief of distress of the people, the Famine Code is adequate and makes full provision. Only a certain class of men are not likely to get the benefit. The respectable poor and the infirm cannot get help unless famine is declared.

This class of people is likely to suffer. But no Government can do anything to help them. They must find relief by means of private charity and for this purpose there is ample provision in the Famine Code for stirring up private charity. The State also has been doing its best to augment charity funds by liberal grants in aid. During the famine of the last year, cheap grain shops and similar institutions were liberally helped by Government.

Cattle:—How to save cattle in famine times is a very difficult problem. So long as uneconomic holders remain on land, certain amount of distress will always appear. There are thousands of cultivators who own or cultivate two or three or five bighas of land and who own a few heads of milch and other cattle, specially the former. Most of these people carry on cattle-breeding along with agriculture and agricultural labour. They keep, on share system, dry cows or buffaloes of well-to-do cultivators, till they are in calf again. Some of them cultivate land to get fodder for these cattle and even in ordinary years for a few months they are fed on leaves as their supply of ordinary fodder is limited. When the crop fails their cattle are the first to suffer and brought to the market for sale. No system of famine relief can help them. The better class of cultivators are able to save fodder in ordinary years but their use of fodder is wasteful and their system of storage defective. For fear of incendiarism people are afraid to store them. The supply of fodder has also been reduced. More land has been brought under cotton which does not yield any fodder. During the last fifteen years, about eight lacs of bighas have been brought under cultivation and most of the waste land, which supplied fodder, has been taken up for cultivation.

All these causes have been creating dearth of fodder and famine problem is now mostly a problem of fodder, as men, who can migrate, are easily able to find labour.

274. In well-organised agriculture, the farm must maintain its own cattle, that is, the cultivation should be so arranged that the cattle should get the fodder supply therefrom, not only for ordinary years but to meet the needs of the famine years also. In the Naosari District, the cultivators reserve a part of their land for fodder. Similarly, in other parts, they should be taught to cultivate food crops like *bajri*, and *jowar* that would give them more food and fodder. Special inducement may also be given. Cultivation of special fodder crops may also be shown by the Agriculture Department. Special concession has been recently given to Co-operative Societies to utilize village waste land for the storage of fodder, but, owing to certain defects in the order, it is not yet fully taken advantage of. The land should be vested in the Society for a long term of years and the services of village watchmen should also be granted for the protection of the stock.

But apart from the development of private resources, the State will have to make provision for the supply of fodder from outside,

from the State forests. This supply is available rather late in January or thereafter, but, if a certain quantity of fodder were reserved annually; in fully pressed bales at different depots in the State, the needs of early months may be met with. This system was suggested in 1911 and 1915 by the Famine Commissioners and we are glad to learn that arrangement has been made for the storage of fodder from the forests of the Naosari District. We recommend that similar arrangements may be made for the storage of fodder for the Amreli District in the Gir forest.

4. *Gowchar*:—

275. During the course of this inquiry, complaints were made by several witnesses that village *Gowchars* have been very much reduced; and therefore, the people do not get sufficient grazing area for their cattle. According to Sec. 45-C of the Land Revenue Code, land upto 5 per cent. of village area is to be reserved for grazing purposes. The real object of keeping the *Gowchar*, as far as we can see, is to provide a village common as an exercise ground for the cattle. The plot is not intended to serve solely as a pasture. If it was intended to serve that purpose 5 per cent. of land could never suffice. However, there is some misunderstanding on the part of the people that the common should serve as a free grazing ground. This impression should be removed. As to the sufficiency of the grazing ground, we do not know on what calculation, 5 per cent. has been reserved. From the inquiries made in several Talukas, it appears that the *Gowchars* in most of the villages have been reduced below 5 per cent. The following table shows the *Gowchar* areas for some of the Talukas:—

Deficiency in the *Gowchars*
should be made up.

Name of the Taluka.	Gowchar land in bighas.	P. C. of the total area.
1	2	3
KADI DISTRICT.		
Kadi	17,528 17 0	4.9
Kalol	12,977 10 4	4.5
Dehgam	12,642 8 4	4.8
Attarsumba	3,731 4 0	4.5
Vijapur	8,088 14 0	4.0
Patan	19,368 9 0	4.4
Sidhpur	11,937 12 0	4.2
Kheralu	11,805 10 0	4.8
Chanasma	13,100 0 0	3.9
Harij	5,892 17 0	3.9
Visnagar	8,110 1 8	4.9
BARODA DISTRICT.		
Baroda	8,606 6 0	4.0
Padra	9,060 8 0	4.7
Dabhoi	9,178 2 0	4.4
Savli	9,350 18 0	4.2
Sankheda	10,184 16 0	4.3
Shinor	6,731 12 0	4.9
Karjan	9,875 11 0	4.4
NAOSARI DISTRICT.		
Kamrej	5,967 2 0	3.6
Palsana	2,811 2 0	3.2
Gandevi	1,490 2 0	3.0
Mangroll	12,824 11 0	5.2
Naosari	4,787 0 0	3.5
Songhad	16,049 16 0	6.7
Vyara	19,120 18 0	7.0
Mahuva	6,011 11 0	4.3

Gowchars are absolutely necessary for the village cattle. They cannot be expected to merely roam about; they must get something to browse; therefore, this area should, in no case, be reduced but on the contrary, wherever there may be any deficit, it should be made up by the acquisition of land.

276. The *Gowchars*, as they are, are mostly neglected, all sorts of scrub jungles grow and most of the land remains as a useless waste. The people must be compelled to keep them in proper order and in a condition to be fully utilized. Even if the existing *Gowchars* are well-kept they will go a long way to meet the existing needs of the people.

The people must be taught to keep the *Gowchars* in proper order.

Unfortunately, the *Gowchars* are not considered to be the property of anybody and therefore they are neglected. The people must be taught to keep them in proper order.

5. *Roads*:—

277. Except in the Amreli District where a number of *pacca* roads were made during the famine of 1900, very little attention is paid to agricultural roads in the Raj. In the Baroda, Kadi and Naosari Districts the existing roads are either fair-weather roads or water courses and during the four rainy months, most of them, specially those in the black soil region, are impassable and all communication, with the villages situated on them, is almost stopped except to pedestrians. After the rains are over, it takes a very long time to repair them and during the time the crops are mowed the roads are usually in a very bad condition. Where no such roads exist the old sandy roads, as in the Kadi District, are the most troublesome. It requires always two pairs of bullocks to carry a cart. In summer, when the heat is intense, it is cruel to work the animals; the sand, which is ankle-deep, becomes hot and raises a cloud of dust.

278. Like the railways, roads are equally important for agricultural purposes. Good roads reduce the cost of carriage of crops from the village to the Taluka market, or the near Railway Station. They save a good deal of animal power. From the administrative point of view, it will be a great gain, if all the parts of the State are approachable all the year round. For the development of vegetable gardening good roads are absolutely necessary.

279. The outstanding policy of His Highness' Government is to build railways wherever possible and therefore the road programme has been given a secondary place. It is true that in some tracts it is better to have a railway than a road. In the sandy tracts of the Kadi District, it always costs enormous sums to construct *pacca* roads and to maintain them. The heat in summer months is intense and easily disintegrates the road-bed. But it is not possible to have railways at every place. As far as can be seen the railway programme, with a few exceptions, is now nearly over. It is, therefore, necessary that more funds should be devoted to the construction of important roads. With the limited amount of funds it is difficult for the Local Boards to construct all roads. They should be asked to build inter-village and other roads connecting with the State trunk roads. The road programme by the District has been made and construction should be undertaken, starting with roads that are more important. The Local Boards also should be asked to pay some more attention to this subject.

In order that the road programme may be steadily carried out, we would suggest, as the Industrial Advisory Committee has

been doing since the last four years, that a definite sum may be set apart in the Public Works Budget for the construction of new roads.

280. The village people should also be persuaded to repair the village roads and keep them in good repair by their own manual labour. It is impossible under the existing circumstances for the State or the Taluka Boards to find

The people should contribute their manual labour for the repair of the roads.

all the money for the construction or improvement of the roads. But if the people contribute their manual labour, the State or the Boards may supply the materials and a larger number of roads may be constructed. Even in the most advanced country like America, the people readily contribute their own personal labour. There is greater reason, therefore, why our people should do the same.

6. Tenancy Legislation:—

281. 14,21,309 bighas or 23 per cent. of the total cultivated land is in the hands of the non-cultivating *Khatedars*. This is a great draw-back in the agricultural economy of the State. All this land is cultivated by the other cultivators mostly on a fixed rental and in some cases on the share system. The rental varies from Re. 0-8-0 to Rs. 50-0-0 and the share from $\frac{1}{3}$ to $\frac{1}{2}$ of the gross produce. Most of the tenancy contracts are for a short term, from one year to three years, but in most of the cases the ryot is allowed to continue from year to year. In the newly settled Talukas of Vaghodia and Savli, long leases have been given to cultivators who have been brought from outside.

Under the temporary rental system, land could not be cultivated properly. No costly improvements can also be made by the tenants. The owners are also seldom interested in the improvements. There is a great loss to the country from short term leases.

282. There is not the least doubt that under the present system the land is neglected; but the bulk of the opinion is against any tenancy legislation. Only very few favour some legislation; they suggest that leases of agricultural land should be allowed for a period not less than ten years and may even extend to more than 10 years.

Tenancy legislation is unsuitable.

Our opinion is that no such legislation should be undertaken for the present. Tenancy Act may be necessary where *Zamindari* or *Malguzari* system of land tenure may be in existence; but for the Ryotwari tenure it is unsuitable. Tenancy laws are a fruitful source of legislation specially where fair rent has to be fixed and the improvements are to be assessed, for compensation. If legislation has to be made for renting land for a term of years, no useful purpose would be served, unless rents are fixed and the improve-

ments are permitted. The best remedy for this defect is to re-constitute holdings on economic basis. If that constructive measure were adopted the evils of short term rental would, to a great extent, disappear.

7. *Markets*:—

283. In the absence of well-organised markets the cultivators have to deal with ordinary shop-keepers or merchants for the disposal of their produce. **Markets should be constructed.** In this they have to suffer much. They do not get full value of their produce. It is, therefore, necessary that markets may be organised at the Taluka towns or other trade centres for disposal of the produce. A Committee of local merchants may be appointed and brokers and *Tolats* may be licensed by it. Rules may also be made for the payment of the prices and the publication of the current rates. We have come to know that such a market exists at Billimora where the *Mahajan* of the place have framed rules, appointed a Committee and all the sales are conducted under its supervision. Similarly, the *Mahajans* of the different places may be persuaded to adopt a like procedure.

8. *Agricultural Labour*:—

284. The scarcity of labour has been felt all over the State since the last decade with the consequence that wages have been steadily increasing. **Agricultural labour should be saved by the economic arrangement of holdings.** We attribute this to three-fold causes: (i) migration to cities and towns where the labourers get much higher wages in factories and on Public Works; (ii) large amount of land coming under cultivation; and (iii) steady increase in the non-cultivating *Khatedars*. Except the last course, it is difficult to check the tendency of the others and for the last we have discussed the phenomena elsewhere. But the general labour supply could be increased in a small way by the economic re-arrangement of holdings so that labour could be saved.

285. In this connection, our attention was drawn to a special phenomenon in the Naosari District. **Indentured labour in the Naosari District. No special legislation necessary.** In this District, a part of the labour is engaged on a long term contract for a year and, in some cases, the whole family undertakes the work. To induce these men some advances have also to be made in the beginning; but several times, the men leave their employers before the contract is fulfilled, and run away to some other State or Taluka and the poor cultivator loses heavily. To remedy this evil, some of the witnesses suggested that special legislation should be enacted by which the men could be prevented from avoiding the contract and that some kind of reciprocity may be established between the adjoining States by which these men could be brought back and made to fulfil the rest of the contract. If we examine closely the whole system and the proposal we come to the conclusion that it amounts to the system of indentured labour. The

labourers run away not because they get better terms elsewhere but because the treatment given to them is not at all sympathetic. Most of the labourers are *Dublas* and *Dhankas*, members of the aboriginal classes, illiterate and ignorant. The employers sometimes maltreat them and to avoid further trouble they run away to some other places. To force these people to stick to the cultivators and work under sometimes degrading condition would be cruel. We, therefore, suggest that no action need be taken to amend or enact laws. The provisions of the Contract Act are sufficient to meet the existing requirements.

286. As for the increase in the efficiency of labour, we have no special suggestion to offer. We must wait till the people get educated and their sense of responsibility is developed.

We must wait for the efficiency of labour till the people get educated.

9. *Water-logging*:—

287. Between 1880 and 1900 several *kans* were constructed to prevent water-logging and good results were observed in the reclamation of the water-logged areas. Yet, there are several places where the needs of *kans* are still felt and several witnesses came before us with complaints. We had no time to go into the merits of the proposals. We would, therefore, suggest that a special inquiry be instituted to look into this problem and submit proposals for adoption to the Government. This is an important subject and should be attended to immediately.

A special inquiry should be instituted for the water logging.

10. *Cottage Industries*:—

288. The whole time of the cultivators is not fully utilized in agriculture. In dry cultivation tracts the cultivators do find leisure time in the summer months. In wet areas also there are periods of intervals where they can get a month or two to do some other work if they like. This leisure period is found much longer in all the cotton tracts where the cultivator has the least work to do after planting cotton.

The cultivators are not engaged throughout the year.

289. During these spare periods, the cultivators hardly do any work, except rope-making in a very small way; while the rest of the time is wasted in idleness and in visiting friends and relatives. This time they can devote to some productive purpose which would relieve them of the monotony of the agricultural operations and augment their small income. Several industries could be suggested for their benefit. They could take up spinning and hand-loom weaving. They were the old Cottage Industries and were largely practised before the era of modern machinery. Even to-day, in some villages like Vijapur and Unza, hand spinning and weaving side by side with farming is going on. These could be extended. Besides these, hosiery and lace-making, rope-making by improved

Several industries could be started as subsidiary occupations of the agriculturists.

methods, fruit-canning (at places like Dhamdachha), basket-making, poultry keeping, horse breeding, etc., can be introduced. It is difficult to suggest the whole list of cottage industries. As a first measure, we would suggest that the Department of Commerce and Industry should make a thorough inquiry into each locality, (1) of the cottage industries that were once prevalent and are now in extinct; (2) of those that are still surviving; and (3) of the others that could be started taking into consideration the type of cultivation and aptitude of the people. After this survey, the Department should carry out experiments and get ready the implements and the necessary information. Then, trained demonstrators may be sent out to work among the people. In the beginning, Tagavi loans may be given to enable the cultivators to purchase implements and the necessary raw materials. Probably, sales depot may have to be opened at suitable places, to serve as distributing centres for raw materials and the finished products. The most important industry connected with agriculture is dairy. It is a purely woman's industry, and we have made a few suggestions for its development in the other part of the Report. Cattle-breeding, poultry-keeping, silk-rearing and several other industries might be developed side by side.

11. *Village Telephone*:—

290. For the development of business and to break the isolation of villages, it has been proposed by the Department of Commerce and Industry that in small advanced Talukas such as Dabhoi and Choranda, a village telephone service may be opened. All the important villages having business relations and where it is going to be a paying business may be connected with the head quarters and the service may be used both by the Government and the people, the latter paying a small rate. This proposal has been negatived as it was found that no Taluka in this State has yet reached the stage when telephone service would be useful and would pay its own cost. Similar service has been in operation in some of the small Native States of Kathiawar and has been found useful for administrative purposes. The people also make use of the service to some extent for their business purposes. As an experiment, we suggest that one Taluka may be so connected in this State.

The villages of a Taluka may be connected by telephones.

CHAPTER IV.

FORESTS.

(A). Preliminary Considerations.

291. Forests play an important part in the economic life of a nation. Not only are they useful as a source of building and other materials that are required for the domestic and industrial life of the people but they are of great value in the preservation of moisture, and in the gradual feeding of the rivers that have sources from the forest areas. In the Baroda State, the forests of the Naosari District have proved of immense value. Of all the four Districts of the Raj, that District has an almost assured rain-fall. Besides, when on account of the failure of the rains in the other Districts, scarcity of fodder is felt, the forests of Naosari supply an abundant quantity of fodder and permit the grazing of thousands of cattle from the affected districts. This saves a number of cattle from starvation and death. The forests supply a very large quantity of fuel, timber and raw materials for a number of industries. Therefore, any steps that may be taken in developing the forests would be in the right direction.

292. Before 1873, Land Revenue was realised by men to whom the revenues were farmed; and the farmer was free to do anything with the forests of the Talukas for which he got a lease. He fixed his rates for forest produce and made as much money as he could during his tenure. On the abolition of this farm system the State directly realised its forest revenue by locating *nakas* or forest depots at several places. At these *nakas* passes were issued for all sorts of forest produce, green or dry, at fixed rates. The system obtained till 1877, when a separate Department was established to look after the State forests. From 1877 to 1884, the Department was under two Junior Officers of the Bombay Forest Service, who introduced the system of selling timber from one end of the forest to the other at the option of the contractors who undertook to pay certain fee per *khandi* (about 12½ cubic feet) of timber removed. From 1884 to 1890, the forest remained in charge of several Naib Subas of the Revenue Department who unfortunately continued the pernicious system and thus completed the work of denuding the forest of all timber of larger dimensions. In 1891, the services of Mr. E. E. Fernandez of British India Service were obtained and he gradually put a stop to the old system. A Forest Act was passed which

gave legal basis to State Forests. The work of defining the State Forests, reserving the promising portions, fixing their boundaries and preparing working plans was undertaken and has been accomplished.

293. The forests which are to be permanently maintained as such are called Reserved Forests, while the rest of the area is called Unreserved Forest. The intermediate class of Protected Forests is recognised, so that the whole of the non-reserved area is left open to the extension of cultivation. The area of Reserved Forests on the 31st of July 1917 was 6,92,372 bighas, i.e., 636 square miles. After Naosari stands Amreli and then Baroda in order of their forest importance. Kadi District has no forest worthy of the name, but a small beginning has recently been made for forest conservancy in the *kotar* land on the banks of Vatrak, Meswo and Khari rivers in the Dehgam Mahal and Atarsumba Peta Mahal.

294. The forests are of a deciduous or mixed type. A complete list of the forest products is given in Appendix VI. They contain all sorts of trees and shrubs. There is no single tract devoted to any single species. Most of the old standard trees are cut up but efforts are made to allow the new growth to attain larger dimensions. The cuttings are carried out under regular working plans. The method of treatment is generally coppice with a fairly heavy reservation of standards on a rotation of 40 years. The object is to supply timber and firewood for local requirement as well as for trade purposes. The reservation of standards is expected to furnish large timber in the next rotation, the object being eventually to resort to the high forest method of treatment which aims at regeneration of trees from seeds and not from coppice shoots and the production of large timber.

In Nanchhal and Vajpur, improvement fellings are quite recently being introduced, these being confined to the marking and removal of only dead, dying, over-mature as well as hollow, burnt and unsound trees allowing certain prescribed girths.

At present, all exploitations are carried out by the agency of contractors. Thus, coupes are annually prepared for felling and sold to the highest bidder. This system has been found more economical than the Departmental felling. Annually, about 70 coupes, distributed all over the forest tracts, are sold for the cutting of standard trees. Liberal privileges and concessions have been given to the residents in the forest tracts under a special Privilege Code. For expansion of cultivation, large areas, known as Kheti blocks, have been set apart in the Naosari Prant forest region.

295. The total income to the State from the forests is as
Forest Revenue. under (1916-17):—

No.	Heads.	Income.
		Rs.
(1)	Timber	1,08,962
(2)	Firewood	2,189
(3)	Bamboos	48,214
(4)	Miscellaneous... ..	88,601
	Total ...	2,47,966

296. The Department of Forests was organised in 1894 and from that period systematic exploitation has been going on. The Department has, besides the Conservator, two Assistant Conservators, seven rangers and deputy rangers, ten foresters, two surveyors, besides a number of guards, clerks, depot officers, fire watchers, etc.

297. Most of the forest products—timber, fire-wood, tannin materials and dye stuffs, gums, medicinal drugs, lac, etc., are exported in raw condition. Local manufacture is confined to *catechu*, charcoal, basket-making and manufacture of rosha grass oil on a very small scale.

298. Besides the industries mentioned above, there are several other industries that could be started to utilize the forest products. Even in the existing industries, better methods of manufacture could be introduced. Charcoal could be manufactured in portable retorts, *catechu* could be manufactured by improved methods; better class of baskets could be made out of the bamboo. There are many improvements that could be effected in the processes adopted in the manufacture of these. But it would be of still greater value if the other major and minor products could be utilized locally and sent out in a finished condition. It is impossible to give in this Report, a full list of the industries that could be started. First, we do not feel competent to pronounce the feasibility of any one industry. In order to do that, expert knowledge and thorough investigation are required. We have neither the requisite knowledge nor time to go into the details. We would rather make general suggestions and leave the details to be worked out by the Forest Department in co-operation with the Department of Commerce and Industry. For our immediate purpose, we have a few suggestions to offer.

(B). Forest Industries that could be developed.

299. I. *Wood-distillation*:—The Department of Commerce and Industry has taken up this problem. *Wood-distillation.* Samples of important woods have been sent to the Tata Science Institute and the results are being awaited.

In the meanwhile, a Bombay Syndicate has been interested in this industry and an independent inquiry is going to be made by them also.

300. II. *Rosha Grass Oil*:—Rosha grass grows abundantly in the Nessu tract and as an experimental measure, oil was extracted departmentally. **Rosha grass oil.** So far the result has been encouraging and justifies extraction, by taking it up on a large scale.

301. III. *Mowra Seeds*:—These are gathered in the Naosari District forests and exported. Their local use for the manufacture of soaps, for acetone and motor spirit are also worth investigation. Already, the Hind Candle Works at Billimora, which manufactures candle, glycerine and soap, uses a large quantity of *mowra* oil. **Mowra seeds and flowers.**

302. IV. *Tannin*:—A large quantity of tannin materials are sent raw. These could be utilized here and tannin extracted. Arrangements are being made by the Department of Industries to analyse them. **Tannin.**

303. V. *Timber*:—This is also sent partly dried and sawed. The State Public Works Department requires a large quantity of timber; therefore, a Saw Mill could be established in our jungles and all the timber, required for the purposes of the State, may be prepared in suitable sizes and supplied. This would save some expense to the State. **Timber.**

304. VI. *Immunity against white ants*:—To make timber of all kinds immune against white ants is also a subject deserving some attention. **Immunity against white ants.**

(C). Suggestions.

305. As said above, it is impossible to suggest in this Report all the industries that may be possible to be developed. Before definite opinion could be given, some preliminary investigation and inquiry should be made. For this purpose, we suggest the following measures to be adopted:—

I. That close co-operation should be established between the Departments of Forest and Commerce and Industry. Both of these Departments should lay down a programme and carry out inquiries. The aim should be to send out the materials in the best possible manufactured state.

II. That a Forest Research Laboratory may be opened at Baroda where all the important forest products may be analysed and their true economic value found out. Without a good Laboratory it is not possible to get hundreds of samples tested.

III. That a good Forest Museum may be established in Baroda along with the Industrial Museum proposed in another part of this Report. In this Museum, all the forest materials should be exhibited and complete information regarding their

economic value, the quantity available and places where they are found and the uses they could be put to may be given. This information, besides proving of great educational value to the general public, may be found useful for people who may want to go in for these industries.

IV. Propagation of certain valuable species may be specially undertaken. At present, the forests are of a very mixed type—all sorts of wood of different grades growing promiscuously. This system should now be abandoned wherever possible; instead, special varieties that have great economic values may be selected and their growth undertaken. As an example, we may mention what has been done at present, though on a very small scale, by the Forest Department in the propagation of *mowra* trees in the Gir forests. In 1915-16, several maunds of *mowra* seeds were thrown in the bushes of the Gir forests with good results. This method of introducing new varieties may prove of great value. We may suggest also the propagation of *sevan* tree which is specially in demand for the match industry. At present, these trees are found in scattered areas and in small lots, and, therefore, they could not be properly used. Several other species could be suggested but we refrain from doing so, as the feasibility of the suggestion depends upon certain expert knowledge which none of us possesses. We would suggest, therefore, that both the Commerce and the Forest Departments should co-operate and find what varieties are possible to be introduced for the development of local industries; or for the better uses to be made of the forests.

V. A forest railway line should be constructed from Kalamamba to Zankhvav so that forest products could be easily sent out. This line would materially add to the value of our forests. This line will require small tramways which may be constructed when industries grow.

306. If the forests have to be fully utilized, probably the present contract system will have to be given up and Departmental fellings or mere fellings by contract will have to be resorted to. At present, the contractor is interested in certain products; he does not care to utilize all the materials. At the same time, for different industries different men may be interested and all cannot be expected to work harmoniously in the same tract. Therefore, it may be found necessary, later on, to contract Departmental felling, or to modify the present system in some other way to suit the need of any one industry. It is too early to lay down any definite scheme at this stage. We may, however, indicate this difficulty and leave it to be solved by the exigency of the requirements at the time the difficulty is met with.

307. Of late years, there has been found a tendency to encroach upon the reserved forests and take large tracts therefrom for agriculture. With the increase of population, this demand is bound to come and Government will have to take out all the unnecessary tracts from the forests. But in view of the import-

Necessity of the Departmental fellings in future.

Encroachment of forest for agriculture.

ance of the forests in the national economy, it would be suicidal to liberate large areas therefrom and utilize for agriculture, specially when no simultaneous efforts are made for the creation of village wood lands in the agricultural areas. Therefore, we would strongly urge upon Government to stop any further encroachment till a thorough-going programme of forest conservancy is laid down that would include in its scope the whole State. It may be mentioned here that we are not against the extension of agriculture but what we want is that the larger agricultural interests should be well-protected before a small gain is sought to be achieved.

308. Along with the exploitation of the forests on a more economic system the question of the extension of the forests in the other areas is of equally great importance. Some of the Forest areas should be increased. arid regions of the State—specially the Kadi and the Amreli Districts—are devoid of trees and the population have to burn cow-dung manure as fuel in the absence of a local supply of fire-wood. Apart from this, these tracts are liable to frequent failures of rains. Therefore, if good wood-land plots are created all over the region, they may induce better rainfall. The adverse effect produced by the wholesale cutting of the scrub jungle in the Okhamandal should serve as a good warning. Before the Wagher rebellion, the Taluka had a good jungle and, as can be seen from the statistics, a regular rainfall. During the mutiny, the Waghers got harbour in the shrubs and, therefore, the jungle had to be destroyed, with the result that rainfall ceased to be regular and abundant. Now the Taluka suffers from famine every second or third year. Therefore, in the interest of the agriculture, wherever possible, forest areas should be increased and brought under reboisement schemes.

309. The reboisement programme may be divided into two appropriate groups:—(1) the creation of special reserved areas, and (2) the creation of village wood-lands.

(1) *The creation of reserved forests*:—Very recently, Government have sanctioned two schemes, the afforestation of 300 bighas in the Atarsumba Taluka and the reboisement of the waste lands in the Okhamandal Taluka and Beyt in Kathiawar. So far the work is reported to be progressing satisfactorily. But we suggest that a special survey should be made of the whole State and proposals should be invited from the Forest Department and carefully considered. All the large tracts of waste land wherever available should be utilized for this purpose.

(2) *The creation of village wood-lands*:—Along with this, the suggestion made by His Highness the Maharaja Saheb some years back of creating village forests, rather wood-lands, should be taken up. It is true that since 1900 this matter has been receiving some attention of Government. At the initiation and energetic efforts of Mr. Khasherao B. Jadhav, in the early days of 1900, the plantation of babul trees on all *kharaba* lands has been

going on and we now see all over the State their growth. Besides giving Government some revenue they have supplied fuel to the local population and saved cattle-dung manure for agriculture to a certain extent. At present, the babul trees alone are grown, as they grow and mature in a few years, and give good and quick return; but better varieties of trees may be planted. At present all the *kharaba* lands including *Gowchar* lands are wasted. They are not properly utilized; they are neglected and all sorts of scrub jungles grow with the result that most of the *Gowchars* do not serve the real purpose. The roads and their sides are covered with hedges and other shrubs that have no economic value and in places are a positive nuisance. No efforts have been made to improve the village roads and the *kharabas*. All these could be cleared and replanted with useful varieties of shrubs and trees and plots of land, that are lying useless, could be made available both for agriculture and for fodder supply. The hedges could be made of *ketki*; the sides of railways could be planted with *aval*—a great fanning material; the sides of roads, even the *katcha* roads, could be planted with fruit and shade trees instead of allowing them to remain barren. There are many other trees of great economic value that may be found to replace the scrub jungle that is seen all over. One has only to visit some of the villages to realise the waste that is going on in the natural resources.

310. We realise that this problem of the creation of village wood-lands is a huge problem requiring both a careful study and costly execution but we do feel that it is a problem that could and must be tackled. We, therefore, suggest that an experiment may be made in one of the Talukas of the State, as for example, the Pattan Taluka in the Kadi District which may be so taken. A regular survey may be made and the programme of work suitable to the region may be made out and executed under the supervision of an experienced Officer. This is a subject worth taking up. It is true that the initial cost would be rather much but we are sure the ultimate benefits would more than repay them.

311. Since the last few years, concession has been given to *Khatedars* to plant trees in *kharaba* land with the previous permission of the Revenue authorities. But in view of the difficulties that are likely to arise at a later stage the concession does not appeal to the cultivators. The only class that could take advantage of this concession is the labouring class; but it is ignorant of the legal technicalities and is always afraid whether it could get the full benefit. It would be better if the *kharaba* be utilized by the Government agency than it be left to the initiation of the labouring class. For all practical purposes, Government cannot rest content with the granting of the concession. It must, of itself, take active measures.

The creation of village wood-lands should be taken up at any cost.

The Government, of its own accord, should get the trees grown in the *kharaba* lands.

CHAPTER V.

INDUSTRIES.

Preliminary Considerations.

Necessity of devoting attention to the industrial problems of the State.

312. From para. 19 of this Report, it will be seen that during the last 30 years the number of population supported by industries is going down. In 1881, 17·73 p.c. or 4,30,871 were supported by industries, while in 1911, 12·30 p.c. or 2,50,050 were so supported. This clearly shows that the old industries are dying out and the men engaged therein have either migrated or joined agriculture. This is not at all a desirable situation. Agriculture is already over-crowded and on account of frequent failure of rains is getting very precarious. Therefore, to relieve congestion from agriculture as also to provide diversified occupations to the people, the development of industries should be well attended to. Industries moreover can support a much larger number of population than agriculture. Therefore, it is the fundamental duty of the State to devote a good deal of attention to this important problem.

Steps taken by the Government.

313. In para. 45 of this Report, we have summarized the various steps taken by His Highness' Government for the development of industries in the State and the results achieved thereby.

We will now examine the various steps that were taken for the development of industries in some details and then indicate what policy should be adopted for future guidance.

(I.) Organisation of the Department of Commerce and Industry.

Organisation of the Department of Commerce and Industry.

314. The Revenue Department has been considered the chief executive department of the State. Therefore, the important work of developing commerce, trade and agriculture was for a long time carried on by that Department. In this work it was assisted by the Public Works Department and by some of the Naib Dewans who took personal interest in economic problems. In 1905, a separate branch was opened in the Revenue Department and a special Officer was appointed in charge of Commerce, Industry, Agriculture, Customs and a few other allied branches. Soon after it was found that a single Officer, however capable, could not cope with the work of all these Departments and,

therefore, in 1906, the services of Mr. Whitnack were engaged as Economic Advisor; and in 1907, his Office was converted into the Department of Commerce and Industry. But at the same time, he held the Office of Joint Revenue Commissioner. Mr. Whitnack retired from the State service in the year 1909 and thereafter the Department of Commerce and Industry was separated from the Joint Revenue Office and placed directly under the Minister, with the object that the industrial matters should receive the best attention and if possible the head of the administration should remain in charge of it. But at this time, the Director of Industries was asked to work as Registrar of Co-operative Societies which Office was held by the Joint Revenue Commissioner since 1907. In 1915 the Department was again placed under the Joint Revenue Commissioner and the arrangement continues till this time. Under special Council Order the status of the Department continues to be the same as when it was under the Minister with this difference that papers to the Minister pass through the Commissioner (Joint Sar Subá).

315. In order that the work of the Department of Commerce and Industry may be conducted on well-regulated lines, rules were made in 1915 defining the functions of the Department of Commerce and Industry and the aid and concessions—financial and others—the State is prepared to grant. These rules enable the State to maintain continuous Industrial policy as well as inform the people as to what concessions the State is prepared to give. (See Appendix XVII.)

The functions of the Department are defined as under:—

- “(a) To study the industrial and commercial conditions of the State and to advise the Government to take such measures as may be found necessary and advisable.
- (b) To conduct industrial experiments and to give demonstrations of successful experiments.
- (c) To advise manufacturers, merchants and artisans in the development of trade and industry in the State.
- (d) To advise Government on measures that affect commerce and industry of the State.
- (e) To assist the people in the organisation of trade, commerce and industries.
- (f) To investigate and recommend applications for State concessions to His Highness' Government; and
- (g) To do all other duties as may from time to time be entrusted by His Highness' Government.”

316. The following are the important lines of work at present being carried on by the Department:—

- I. Geological Survey.
- II. Hand-loom Demonstration.
- III. Fisheries.

- IV. Regulation of Joint Stock Concerns.
- V. Administration of the Mining Act.
- VI. Boiler Inspection.
- VII. Bureau of Commercial Intelligence.
- VIII. Press and Stationery Department.

317. The present staff of the Department is constituted as follows:—
Present staff of the Department.

- 1. Director.
- 2. Fishery Assistants (two).
- 3. One Weaving Assistant and four Demonstrators.
- 4. Geologist and Mechanical Engineer.
- 5. Boiler and Factory Inspector.

Besides, the services of the Professors and teachers of the Technical Institute are always available when required for advice, experiments and inquiries. The workshop of the Institute is also utilized for experiments.

318. In order to associate the people in the work of developing the resources of the State on proper lines, an Industrial Advisory Committee was appointed by His Highness the Maharaja in 1914. The Committee, at present, consists of 26 members out of whom 13 are non-officials. The non-official representatives are recruited two from each District, two from the Legislative Council, two from the Baroda City Municipality and one from the Baroda Chamber of Commerce. In addition to the above number we recommend that all other important Municipalities, besides the Baroda City Municipality, may be allowed to select one representative.

319. Its principal function is to study the local needs both as regards industries, agriculture and forest and advise Government on the measures necessary for the economic development. It is empowered to make small experiments and a sum of money has been placed at its disposal. It meets once a year, and its sub-committees—one on agriculture and the other on industries—meet at regular intervals and investigate problems entrusted to and initiated by them. Though it is recently started, it has been doing fairly good work.

Its functions.

(II). Industrial Surveys.

(A). Geological Survey.

320. The first Geological Survey of the State was made in the year 1892 by Mr. Bruce Foote of the Madras Geological Survey and his report was published in the year 1898. With a view to determine the economic value of the various geological deposits, another survey was started in the year 1907-08 and Mr. Sambashiva Iyer of the

Mysore service was engaged. Most of the deposits were analysed and his report suggested various steps that should be taken with a view to determine the quantity and the economic value of the deposits. The work has been to a certain extent carried out, but a good deal still remains to be done.

Since the last two years, a Geologist has been attached to the Department of Commerce and Industry who carries out the work left by Mr. Iyer.

(B). Economic Surveys.

Industrial and Economic Surveys.
321. The first industrial survey of the State was made in the year 1893. A Commission consisting of three Officers and one non-official member was appointed. It visited every Taluka and submitted its Report in the year 1895-96. It was concerned both with agriculture and industries, but so far as the latter were concerned only the existing hand-industries were inquired into. The Report was bulky and an English summary of it was prepared. The important fact brought out by the Commission was that the old hand-industries were dying out. Consequently, as will be noticed in another part of this Report, several branches of the Kala-Bhavan (School of Arts) were started in some of the Taluka towns.

In about 1907, another survey of a general economic nature was intended to be conducted but the idea was dropped and instead, special Taluka inquiries were ordered to be made. Accordingly, an economic inquiry of the Padra Taluka was conducted by Mr. A. N. Datar, the then Director of Commerce and Industry.

Agricultural Indebtedness inquiry.
322. Another important inquiry was in connection with the Agricultural Indebtedness in the State. The problem attracted the notice of His Highness the Maharaja during the year 1899—the year of the memorable famine of Gujarat—and a comprehensive inquiry was instituted.

The whole question was entrusted to a Committee of four Officers, but the final compilation of the Report was entrusted to Mr. Manilal B. Nanavati in 1911 and the Report was submitted in the following year.

Sociological, Village and Town Inquiries.
323. Soon after the submission of the above Report, His Highness ordered that periodical inquiries into the economic condition of people “living in particular villages or situations” may be made and that as an immediate step a Sociological Survey may be made of the servants (numbering 800) of the Khangi (Palace) Department. This inquiry was conducted by the Director of Commerce and Industry in the year 1914 in consultation with Rao Bahadur G. H. Desai and Dr. Meyer and a Report published in the same year. The second step in making a similar inquiry was the survey of a typical village. Under the orders of His Highness

the Maharaja, a village in the Petlad Taluka was selected and a full economic survey was made. The report of this survey is under preparation. Besides these general economic surveys, industrial surveys of two towns of Petlad and Billimora have been made. These town surveys are useful in so far as they reveal the needs of local industries.

(III). Pioneering of Industries.

324. His Highness the Maharaja, from the commencement of his rule, had noticed the absence in Baroda territories of any modern industrial institutions; and finding that the fact was due in a great measure to the conservatism of the people, His Highness resolved to start, in the year 1892, a Cotton Spinning and Weaving Mill as an object-lesson to capitalists. 10,328 spindles and 104 looms were set up. The total cost of machinery and building amounted to Rs. 5,53,500. Subsequently, some more looms and machinery were added, and to the date of selling the Mill in 1905, the total capital expenditure amounted to Rs. 6,35,000. By that time, it was realised that the importance of the Cotton Mill Industry was well-understood and that private enterprize was forthcoming to start new Mills. Therefore, it was decided to sell it. The sale fetched Rs. 5,00,000. During the 21 years of its working, it has paid, on an average, 3 per cent. interest on the investment.

The object in starting this Mill was fulfilled when three Cotton Mills were started within a couple of years of the sale, two in Baroda and one in Sidhpur, all by Baroda subjects.

325. The second industry pioneered by the State was the Sugar Factory at Gandevi; in the year 1884. At first, it was started as a Joint Stock concern, and the State took shares for half the amount. But as this did not work satisfactorily the State purchased the factory at a cost of Rs. 3,00,000, and worked it for some time. However, the working resulted in a loss and the factory closed in 1894. In 1904, the concern was sold for Rs. 70,000. When the factory was first started, it was taken for granted that ample supply of cane would be obtained from the surrounding districts. But no serious effort was made to develop the cane cultivation nor to extract juice from the date palms found in the district. The new purchaser organised a Joint Stock concern and leased the factory to another merchant who worked it only for a short time. As far as can be gathered from the past history of this concern, a full and proper trial has never been given to the industry nor the lessee just mentioned, had the necessary working capital. Very recently, a new lease has been granted and the factory has started work.

326. To meet the growing needs of the Public Works Department, a Brick Factory was started in the year 1890 at a cost of Rs. 24,722. Provision was made in it for the manufacture of Mangalore tiles, earthen-ware pipes and jars, and the necessary machinery was

purchased. For some time, experiments were made in the manufacture of the other articles mentioned, besides the regular manufacture of bricks, but none of the experiments proved successful. In the year 1907, the factory was sold to a local P. W. Contractor for Rs. 16,699 on condition that he would supply the P. W. Department a certain number of bricks at a special rate. It is now working successfully and besides bricks, it is manufacturing Mangalore tiles. Experiments are also being made in the manufacture of jars and earthenware pipes.

327. In 1909, machinery for Chrome Leather Tanning was purchased. Before, however, it started working, a private Company came forward to whom the machinery was transferred at cost.

328. In order to meet the requirements of the palaces as well as the Departments of the State, a fully equipped Furniture Factory was started in 1909. It is turning out high class furniture, and is managed by one of the former State scholars trained in Europe. Further, a complete electrical generating plant has been installed for lighting palaces, which is also supplying electric light and power to private persons in the Baroda City. The plant is being extended and when this is completed a larger amount of electricity will be available both for lighting and industrial purposes.

The Public Works Department owns a full set of Stone-working machinery which is installed at the famous Motipura marble (Serpentine) quarries. This has now been leased to private enterprise.

329. Since Government management as a general rule can hardly be economical or financially successful, it will be seen from the above that the Baroda State has stuck to its original policy of starting an industry and giving it over, as soon as practicable, to private enterprise. Excepting the Sugar Factory, none of the factories have failed and even the Sugar Factory is likely to be a success under competent management.

(IV). Investigations of Industries.

330. It is one of the important functions of a State to inquire into the natural resources of the country and investigate the possibilities of their development for industrial purposes. The State has, since a long time, taken up this duty and no money has been spared. Experiments were made and experts engaged in several industries as will be seen from the following:—

1. *Glass*:—Experiments were made in Baroda in 1887-88 with the various sands found in the State to test their suitability for glass manufacture. Samples were sent to Europe and as a result it was almost decided to bring Belgian experts. But as the State Consulting Engineer

in Europe did not find the sand, experimented upon, of the highest quality and as the cost of manufacture was likely to be high, on his advice the project was abandoned. About Rs. 5,000 were spent towards these experiments both in Baroda and abroad. Better class sand has been recently found and a Glass Factory is now established in Baroda.

2. *Cement*:—An English Cement expert was engaged to report on the suitability of clays and lime-stones found at Dwarka and Velan for cement manufactures. Favourable reports have been received for Dwarka and a lease has been granted for a Cement Factory at the place. The Velan deposits have been further investigated and the granting of a lease is under consideration.
3. *Cotton Seed Oil*:—A thorough inquiry into this industry was made. Local seeds were sent to America to be tested for their oil-yielding property; and the result of the investigation was published. As a result a Cotton Seed Oil Mill was started in Baroda. The Agents of the Company, however, at the last moment disregarded the advice of the Department of Commerce and Industry and purchased an unsuitable type of machinery. The factory crushes castor and other oil-seeds but not cotton-seeds.
4. *Oil and Soap Industry*:—An American Expert was engaged in the year 1910 to investigate the possibilities of oil industry and the manufacture of soap and other products. The report, he gave, did not give sufficient information or guidance to be of practical use.
5. *Tanning*:—In 1907, an expert trained in America was engaged to make experiments in Chrome Leather Tanning and a set of machinery was purchased. It was proposed to make experiments in the Kala-Bhavan, but before the work was started a Joint Stock concern purchased the machinery and started a factory. Unfortunately, both the Agents and the expert proved thoroughly incompetent and the factory was closed after a short period of working, with the result that a really promising industry has received a set-back in the eyes of the people.
6. *Calico printing*:—In the early period of the Kala-Bhavan a set of machinery for calico-printing was purchased. The experiment proved unsuccessful and the machinery was sold.
7. *Hand-loom*:—Experiments were made in order to find out a new type of hand-loom to replace the present old style throw-shuttle loom. As its result a new type of fly-shuttle hand-loom has been designed and is being introduced. Experiments in better class weaving in silk and wool are also being conducted. A Weaving

Expert, with a staff of demonstrators, has been engaged and attached to the Department of Commerce and Industry.

There are some other industries, the possibilities of which are being investigated, such as the refining of China clay and reh, manufacture of alkalies from salt at Dwarka, of iodine from seaweeds of pottery from China clay, soaps, matches, etc., but the inquiries are not yet complete. The granting of a lease for the manufacture of alkalies from salt at Dwarka is under consideration.

(V). Fisheries.

331. When His Highness the Maharaja visited Dwarka in December, 1903, he was informed that real pearl shells were occasionally found in the creek near Beyt. Thereupon, His Highness was pleased to direct that an expert in pearl fishery might be engaged to investigate the possibility of finding in this creek pearls in sufficient quantity and of a quality which could stand the test of trade competition.

The services of Mr. James Hornell, F.L.S., Marine Biologist and Inspector of Pearl Banks, Ceylon, were engaged. He visited the Okhamandal Coast and submitted his report in the year 1909. in which he made several useful suggestions for the development of fisheries of the Okhamandal Taluka.

Upto the time of Mr. Hornell's visit, the right to collect chanks alone from the Okhamandal Coast was annually auctioned. As a result of investigations, the right to collect window-pane and real pearl oysters is also leased out by which the annual revenue of the State has increased on an average by about Rs. 15,000.

332. With a view to give some practical effect to Mr. Hornell's suggestions he was consulted during the year 1913-14; and on his recommendation Sir F. A. Nicholson, I.C.S., K.C.I.E., the Hon. Director of Fisheries, Madras Government, undertook to train up two students from the State. Two Science Graduates were selected and sent to Madras, one for training in pearl and edible oyster culture; the other in fish-curing, canning and allied subjects. After their return they were asked to make a survey of the coast of the State and to submit reports of the existing conditions of the fisheries, and the future lines of their development. The schemes submitted were sanctioned and two experimental stations were started, one at Okha for window-pane and pearl oyster culture and another at Madhwar in Kodinar for fish-curing. At Okha most of the work is confined to the inspection of the coast, the study of the life history of window-pane oysters and the relaying of the immature ones in new creeks, so that new beds may be formed. The Madhwar station has been temporarily closed as very few fishermen have been coming since the last two years.

(VI). Development of Commerce & Trade.

333. The necessity for uniform weights and measures was felt for a long time. Every District had a separate system of local weights and measures. This was naturally detrimental to the interests both of merchants and consumers. Since 1885, several Circulars and orders were issued regulating weights and measures. In the year 1904, all these were revised and embodied into special rules laying down a uniform system of weights and measures. The *seer* of 40 rupees weight of 180 grains each was laid down as unit. As for measure, water at its maximum density was considered the standard for a measure of capacity. For measure of length, "Gaj" of 24 inches was taken as unit. From the operation of these rules only gold and silver weights are exempted. This question was taken up in the year 1913-14; however, it has been kept in abeyance till final orders are passed by the Government of India on the Report of the Weights and Measures Committee.

334. To provide standard weights, arrangements have been made in each Taluka to stamp weights brought by merchants and artisans. Since Baroda territory is interspersed with the adjoining British territory, specially in some Talukas of the Naosari District, the local merchants have been put to great inconvenience and to some loss in their dealings with the merchants of the British districts.

335. In 1875, when the new administration commenced its work of reform and reconstruction, there was a system of duties on imports and exports both by land and sea. Goods had to pay duties every time they passed the frontiers of the several Talukas. These taxes operated as a great hindrance to the development of trade and commerce within as well as without the State. The first principle in the levy of duties under the new régime was laid down as under:—

"No more than one import and one export duty will be levied at the railway station and on the frontier. All land *nikas* and all duties and imports levied at them will be abolished. No article taxed when imported will be taxed again when exported and *vice versa*. Only a limited number of articles will be taxed *ad valorem* rates converted as far as possible, as rates on weight."

Transit duties were abolished in most of the places, as customs brought a substantial revenue (about 8 lacs). The administration could hardly go further than this in its simplification. But later on, preliminary to the total abolition of these duties in 1904, the Customs Act was revised and minor items of duty were removed. By this Act most of the town duties were abolished, export duties, except on cotton and *mahuda* were removed and the whole schedule was simplified. The principle of protection of nascent industries was accepted in framing the schedule.

336. In 1909, however, when industrial activities were growing, it was found advisable even at the sacrifice of a large revenue to abolish all the import and export duties except at the ports of Kathiawar where the State was bound to levy them under treaty obligations with the British Government. Even town duties were removed. The State territories do not form a compact block. They are interspersed with foreign territories everywhere and the advantage of import duties was not properly realised. At this time, the Municipal Act came into operation and Municipalities were permitted to levy octroi within their town limits. Wherever possible, the town authorities are asked to levy house tax instead of the octroi. The octroi schedules are closely scrutinised and all articles intended for local manufacture are scrupulously removed from the list.

Abolition of import and export duties.

Besides town duties, there is only the income-tax that industries have to pay on their profits. The incidence of the tax is $1\frac{1}{2}$ per cent. The cotton mills have to pay excise duties on the same scale as in British India.

337. Very recently, it has been proposed to levy an export duty of 3 annas per gallon on foreign liquor manufactured in the Alembic Chemical Works. Import duty has some meaning, an export duty on raw materials is also conceivable, but an export duty on manufactured articles is unjustifiable on economic grounds. We, therefore, recommend that the proposed duty should not be levied since it puts local manufacturers at a great disadvantage.

Export duties should not be charged on the manufactured articles in the State.

338. We cannot conclude this section without referring to the fact that in as much as we are a part and parcel of the same economic system as is found in British India, our industries, such as cotton, leather, oil, agriculture are adversely affected by the Tariff and exchange policy pursued in British India. It is, therefore, suggested here that our Government, in co-operation with other Indian States, should persuade the British Government to adopt a Tariff and exchange policy which will develop the resources of India to the best advantage of the people of India.

The British Government should be requested to change its Tariff policy.

339. Similarly, our spirit industry, which is struggling for its existence, should be treated on equal footing in British India and should enjoy the same privileges as are enjoyed by foreign manufacturers within our territories.

The spirit industry should be treated on equal footing with others by the British Government.

340. In order to facilitate promotion of industries and to regulate them on well-established principles the following rules and regulations have been passed:—

Legislation, act and rules.

Acts and Rules.	Year of passing.
Factories Act	1913
Companies' Act	1897
Mining Act	1908
Boiler Act	1898
Customs Act	1904
Rules for opening factories and acquisition of lands therefor	1904
Weights and Measures Rules	1904
Rules for the Development of Commerce and Industries in the States	1915

Except the last two, all the Acts and Rules are based on similar legislation in British India with suitable local variations.

(VII). Concessions to Industries.

341. Besides the various steps narrated above the State has given various concessions to deserving industries.

Concessions to Industries:

All these concessions may be grouped as under:—

No.	Nature of Concessions.	No. of factories.	Remarks.
1	2	3	4
1	Financial Assistance— (1) Loans (2) Share subscription ...	19 2	...
2	Water at concessions rate 2 as. per 1,000 gallons. (Usual rate is 4 annas per 1,000 gallons from the Baroda Water Works at Baroda).	16	This is over and above the patronage extended by H. H. the Maharaja to several con- cerns from his private funds.
3	Services of experts given to individual concerns at State cost.	2	Leather and the glass fac- tories. Pay of the Manager expert was given for 2 years.
4	Exemption from the pay- ment of octroi duty on the payment of a small lump sum.	11	Most of the factories are situated in the Baroda City; these concessions were given when the import duty was in operation. On the abolition of the customs the Municipa- lity has continued the conces- sions given by the State.
5	Preference in the pur- chase of State stores.	3	

342. Besides these, several other concessions and facilities have been given to the various factories, such as the permission to open distilleries and to manufacture spirits and alcohol, construction by the State of suitable roads to connect factories with railways, the acquisition of land for factory sites, the giving of wood from the State forests at nominal price (to a Match Factory), etc.

343. The result of this liberal policy may be seen from the steady growth of industries in the State.
Result. Though some of the factories encouraged have failed, it has not led to any change in the active programme of State aid.

(VIII). Joint Stock Concerns.

344. The Companies' Act was passed in the year 1897. Since then 58 companies have been registered under it. They may be classed as under:—

No.	Names of Industries.	Total number registered.	Working at present.	Closed.
1	2	3	4	5
1	Banking and Loan Companies	2	2	...
2	Provident Societies	10	...	10
3	Trading Companies ... ..	...	...	...
4	Mills and Presses	21	12	9
	(a) Cotton Mills	4	4	...
	(b) Ginning Factories and Presses	9	5	4
	(c) Oil and Flour Mills	4	1	3
	(d) Others	4	2	2
5	Other Industries	17	5	12
6	Miscellaneous	8	2	6
	Total	58	21	37

Out of these, 21 are working at the present moment. Of the rest, 7 never started work as the promoters were, perhaps, not able to get the necessary capital, 14 went into voluntary liquidation and 9 into liquidation through Court, while 7 are in the process of liquidation. It is unfortunate that the promoters of some of these concerns were men without previous experience in the organisation and the management of Joint Stock Companies. As elsewhere, here, too, they started factories without sufficient knowledge of their undertaking. Neither did they have sufficient funds nor credit to procure the necessary working capital. A few of them also were anxious to get rich quick and mismanaged their business. Of this class were the 10 Provident Societies that failed.

345. If we study the history of industrial development in Europe, America and Japan, the experience of these countries has been of a similar nature. In the early stages of industrial growth Joint Stock Concerns have everywhere failed. Out of the failure of these, new and strong concerns have been built up. At the same time, it must be remembered that some of the gigantic factories of those countries had very small beginnings, in small workshops, or small mills conducted by one or two sturdy pioneers who steadfastly struggled through the first few years and laid the foundations of a successful business. We are getting similar ex-

periences also. The Dyeing Factories of Petlad, the Oil Mills of Petlad and Sidhpur, etc., are still in the early stages of development. Every year they are extending their business and laying foundations for important additions to their works. All over the State are found men full of zeal for some particular industry collecting all the information they can making experiments with their limited means and knowledge, and trying to start their factories. Some of them succeed and others fail. A few such enterprises may be mentioned; manufacture of slate and slate-pen, soaps, cutlery, colours, inks, mercerized yarn, perfumes, safes and locks, etc. The experience gained by several years' working of the Industrial and Manual Training Schools has shown that all over the State are found boys in Schools, who have greater liking for manual work than for ordinary book-learning. Proper facilities being given, these boys may be trained either as skilled artisans or workers in small industries.

346. While considering the industrial aptitude of the people

Use of oil engines and small machines getting popular.

one fact may be noticed. Thirty years ago there were hardly any industries or workshops run by small oil engines. Their use was unknown or not understood. At present, there must be at least 70 oil engines driving water pumps for irrigation; oil, flour, saw, rice and mortar mills; gins, foundry and workshop machinery, etc. Their use is getting more and more popular. Even some of the cultivators have fully understood the use of these engines and are installing and working small irrigation plants. The use of lathes, stamping and punching machinery, treadle presses, Metal-sheet rollers, drilling machines, etc., is getting popular and such machines are often to be seen in shops of silversmiths and copper and iron-workers. If our people are properly guided and carefully trained, there is surely genius enough among them to start any number of small industries. As for the larger enterprises, such as the Cotton Mills, Oil Mills and Refineries, Soap and Chemical Works, etc., there are men in the State who can manage them, yet their traditional training is of a different type. The shrewd businessmen of Pattan, Mehsana, Visnagar and Amreli, of Gandevi, Billimora and Naosari are quite capable of organising the larger industries; but unfortunately few of them possess the necessary information regarding the requirements of modern industries. People in this country have to compete unaided with the highly developed western industries and unless the local industries are started with full knowledge of the business organisation and the scientific development of the advanced countries, they are likely to fail. At the same time, it should be noted that the new industrial environment has been only of recent growth and it must take some time before industrial acumen is developed in investors and technical experts and business-managers. During this formative period, some inexperienced and sometimes unscrupulous persons take advantage of the enthusiasm of the credulous public and start new-ventures that often fail. However, the time is slowly coming when the better class of entrepreneurs is coming forward. So we may expect better results in future.

(IX). Industries that could be started.

347. Without a thorough investigation of each raw material available in the State, it is not possible to definitely suggest what industries are possible to be started in the State. However, from the list of raw materials that are already known or partially utilised, it is easy to indicate what industries could be started.

348. It may, at the same time, be mentioned that from the three Geological Surveys that have been made it appears that the Baroda State does not possess any rich minerals and any hope of developing such industries should not be entertained. Of the minerals that are already known to exist in some quantities are the stones and marbles, clays and gypsum. From the lime-stone available at Okha and Velan recent investigations have suggested the possibilities of manufacturing cement and already a concession for Dwarka has been given; and further inquiries have been made at Velan and the granting of a lease is under consideration. The marble and stone industry in the Sankheda Taluka requires to be worked up, now that the railway has been constructed upto the quarries and the marble-beds. As for the clays, the laterite clay is being increasingly utilized by the tile manufacturers and already five factories manufacturing Mangalore Tiles are working at Billimora, Gandevi and Naosari. Since there is a likelihood of some more similar factories being established inquiries are being made by the Department of Industries to find out all the available resources of the Gandevi Taluka when the clay is available. Ochres are found in the Vijapur, Kamrej and Velachha Talukas and could be utilized for the manufacture of chocolate paints. Some experiments have been made by the Department also. Rich deposits of china clay are available at Ransipur and the clay is refined and sent to Ahmedabad as a sizing material for the Cotton Mills; but the clay could be utilized for the manufacture of chinaware as the experiments already made have amply proved its suitability. The Syndicate that is working at the mine has applied for a long lease and when it is granted the works will be reorganised and a department to manufacture chinaware will be started. However, the work is suffering from one difficulty; it is situated at a distance of 18 miles from the railway station and this heavily adds to the cost of carriage of materials to and from the factory. The extension of the railway from Vijapur has been sanctioned and the construction should now be undertaken at an early date.

349. There are very good chances for the development of Ceramic Industry. Chinaware, earthen pipes, jars, flouting tiles, etc., could be manufactured at several places. In order that this development could be carried on systematically, we would suggest the employment of a Ceramic Expert to study the resources and guide the existing as well as new factories that may be started.

350. Material for glass manufacture is available; but the factory that was started failed twice. **Glass and Alkali Industries.** Another attempt is made to restart the factory. In other parts of India, most of the Glass Factories have failed; very few factories have so far succeeded and it would be advisable that a thorough investigation should be made to find the conditions under which this industry could be successfully carried out at Baroda or some other place. The possibility of the alkali manufacture at Dwarka have been suggested and further inquiries are being made by the Department of Industries. This is an important industry and no efforts should be spared to develop it, if its possibilities are fully demonstrated.

(X). Industries dependent upon Agricultural Products.

351. *Cotton Seeds*:—The principal agricultural products of commercial value are cotton, oil seeds, tobacco and hides. **Cotton industry.** The Baroda State produces about 2,00,000 bales of cotton while the 4 cotton Mills consume about 20,000 bales annually. There are 8,000 handlooms but no statistics are available of the yarn consumed by them. However, at the best, they must be using 6,000 bales of cotton. Most of the cotton and yarn consumed by the Mills and the hand-loom comes from outside the State, and, therefore, there are possibilities of utilizing local cotton within the State. The Baroda State imports annually 24,000 bales of yarn and cloth. This readily suggests that there is a scope for some more Cotton Mills and even for small hand-loom factories. There are 4 Cotton Mills of which 2 are only Spinning Mills and these could put up some looms. Efforts are being made to induce outside capitalists to set up large Cotton Mills for which there is a great field and the proposals are before Government. Small hand-loom factories using automatic or fly-shuttle looms have also been started and small improvements have been suggested in the old pit-loom and demonstration parties are working among the hand-loom workers. In view of these efforts, we have hardly any suggestion to make but to show our approval of and lend our support to the work that is being done.

Most of the raw cotton is ginned and pressed into fully pressed bales in the State. There were 97 Ginning Factories, 2,834 gins and 15 Cotton Press Factories working at the end of the year 1916-17.

352. *Oil-seeds*:—The next important agricultural produce is oil-seeds. **Oil-seeds.** There are castor, rape and sesamum. *mowra, kardi, kanzi*, etc. There are 4 hydraulic Oil Mills with 42 Presses that crush about 3,000 tons of seeds annually. Besides these there are several—not less than a dozen—small Oil Factories working from 4 to a dozen iron *ghanis*, for which no accurate statistics are available. In most cases these are combination factories, including cotton gins, flour mills and rice hullers. The bullock *ghanis* are also working in all the principal towns and villages.

353. From the export and import statistics, it appears that the trade in oil-seeds and oils is as under:—

(for the year 1917-18).		Tons.
Export of oil-seeds ..	... ..	48,773
Export of oils ...	... ..	948
Import of oil-seeds ..	... ..	15,933
Import of oils ...	... ..	748

354. From the statistics provided by the Agriculture and Revenue Departments it appears that about 5,00,000 tons of all kinds of oil-seeds are produced within the State, out of which, as shown above, 49,721 tons are exported. Therefore, there is no doubt that 450 hydraulic presses, each crushing 1,000 tons of seeds annually could be started. The oils crushed in the factories are exported mostly unrefined. Only one Mill at Baroda manufactures double-boiled lin-seed oil. All these Mills could be induced to refine their products and turn them into more valuable articles.

355. *Mowra* seeds are entirely exported, there being no factory that crushes them. *Mowra* flowers are used for the manufacture of country liquors for which the State holds a monopoly. The *mowra-seed* oil is used by the Candle and Glycerine Factory at Billimora and some of the local factories could crush them as the supply of the seeds is quite near their place.

356. Like the Oil Factory at Baroda, the other factories could import lin-seeds and crush them in their mills. There are agricultural tracts all round the State which produce oil-seeds in large quantities. The manufacture of soaps, candles and glycerine could be also extended as there is a great demand for them all over the country. These are products that require fats and oils as their raw material which as shown above are available in large quantities. A soap expert was engaged by the Department of Commerce and Industries in 1916 and some experiments were made; his services were also lent to the Candle Factory at Billimora to organise a Soap Department for the utilization of oilien. But the introduction of the soap industry elsewhere required a number of trained soap boilers for which the Kala-Bhavan undertook to open a special class. Unfortunately, the work has been kept in abeyance since a long time and we would suggest that a special Department should be opened in the School of Arts (Kala-Bhavan) and courses should be organised for training in the chemistry of oils and fats and their manufacture. There is a great scope for small soap factories in connection with the Oil Mills and if properly trained men are available the factory owners, we are told, have shown their willingness to employ them. A fully equipped soap department in the Kala-Bhavan would be able to stimulate the industry very well.

357. Petlad tobacco is a well-known trade article and is exported raw. It is generally used for the manufacture of cigars. Several attempts have been made to cure the leaf and to manufacture cigars and cigarettes. But it does not appear that the efforts made were whole-hearted and thorough. We would, therefore, suggest that as a final effort, the present Deputy Director of Agriculture should be entrusted with the investigation and possibilities of the manufacture may be found out and made available to the public. 1,78,078 maunds of tobacco are exported raw, most of which should be cured and manufactured in the State.

Tobacco.

ported raw. It is generally used for the *hukka* and a part is exported to Aden for the

358. Hides to the amount of 10,614 maunds are exported.

Hides.

There are two important curing yards at Baroda and small yards at Petlad and other places. The tanning that is done at these yards is bark tanning in which *Aval* and *babul* barks are mostly used. Most of these hides are exported to Europe, where they are retreated and finished for the market. Besides these small factories there are a number of curing pits in villages where hides and skins are cured according to the old methods. Most of the hides cured are for local purposes, for *kos* and *varat* and country shoes. A part of them is also exported to Bombay and to foreign countries.

For the manufacture of Chrome tanned leather a Joint Stock Company was started in 1908 but on account of bad management it failed and the machinery was sold. Gujarat has not a large meat-eating population and the hides and skins that are available are of the dead agricultural stock and their supply is limited. Therefore, it has been said that there are very few possibilities for a modern tanning factory working successfully in the Baroda State. But before this statement could be accepted, thorough investigation should be made. Government have very recently sanctioned the appointment of an expert chemist to study the tanning methods followed by the *Chamars* and suggest improvements to be made therein. This expert may also be asked to inquire into the possibility of the leather tanning industry on a large scale on modern lines.

359. *Forest Industries*:—While discussing the development

Forest Industries.

of the State forests we have made mention of the forest industries that could be developed. We, therefore, do not propose to repeat the same over again. The forest resources are undeveloped and careful attention should be paid for their exploitation as suggested above.

360. Besides the industries suggested above, it is quite

Some other Industries could also be started.

possible to introduce some other industries also though these may be dependent upon raw materials that may have to be imported such as hosiery, calico-printing, saddlery and shoe-making, manufacture of tin and hollow-ware, etc. These also will require thorough preliminary investigation. In such cases, besides local inquiries, it would always be best to consult experts in foreign

countries who might collect information about machinery, etc., and render us careful and proper advice. This method of enquiry, though costly, will save the people unnecessary trouble and risk. Some of the important institutions like the Society of Chemical Industry, the Institute of Civil Engineers, the American Society of Mechanical Engineers, and some of the important Universities and Technical Colleges may also be addressed and arrangements made through them.

361. The industrial policy of the State has been laid down in the "Rules for the Development of Commerce and Industry in the Baroda State." (Appendix XVII.) We have carefully gone through them and have hardly anything more to suggest. The rules are carefully drawn and provide for a comprehensive industrial policy. The Department of Commerce and Industry is now put under a separate Officer and we suggest a good and efficient departmental organisation to carry out the various measures.

(XI). Chemical Laboratory.

362. In the Department of Commerce and Industry, a well-equipped Chemical Laboratory should be provided. There are hundreds of raw materials found in the State forests and at other places whose economic values have to be tested and found out. Investigation is not possible to be made at any of the existing Laboratories—at the College, at the Kala-Bhavan or at the Medical Store. They are intended for their own special purposes. Any additional work given to them may interfere with their legitimate functions. Therefore, we would suggest that a special Research Laboratory should be started. It should be in charge of a First Class Chemist with some experience of research work and he should be given the assistance of two apprentices. It should systematically carry out analysis of all the raw materials found in the State and also make experiments on a small scale where possible. It should assist the local industries in the solution of their problems and difficulties. We have no hesitation in saying that any money spent for this purpose would repay in many ways. The only condition of this suggestion is that a whole-hearted effort should be made. Half-hearted measures usually fail, and the unfortunate institution gets a bad name.

Along with the local chemist an outside chemist of some reputation should be employed as a consultant. The programme of investigation should be settled in consultation with and the result should be submitted to him for opinion. In all such matters it is always advisable that the work done at the Laboratory should be checked by some other competent chemist.

363. The two apprentices should be M. Sc.'s and may be chosen from the Baroda College as far as possible. They should be engaged for a term of three to five years. In case they are able to solve any

difficult problem they should be given special bonus or where a new industry is started as a result of their investigation they may be given special facilities for joining it. Such a system is working in some of the American Universities and is known by the Mellon system. We can as well adopt it here in Baroda.

364. In case the Government is not inclined to spend a large sum over a new Chemical Laboratory one of the existing Laboratories may be improved and the necessary equipment should be provided. Of all the three, the College Laboratory is the best suited. Its equipment is nearly complete and with a small expenditure the rest may be provided. We learn that some kind of original research is being done at present and the Professor in charge is willing to undertake the work provided the College and educational authorities give the necessary permission and a room for fitting up the tables. In this case, the investigations may be conducted under the supervision of the Professor of Chemistry. This we suggest as a second alternative.

365. In this Laboratory, pure research work may be carried out. But for experiments on a small scale the Kala-Bhavan should be utilized. It is trying to organise a class in Applied Chemistry and already most of the necessary machinery and apparatus have been ordered out. This Department should be immediately got ready and should be made available for the investigations of the problems of the Department of Industries.

366. It has been represented to us by the Alembic Chemical Works that it has a number of chemical problems to solve and it wants State assistance in the form of the salaries of one or two chemists. We consider that this is a good proposal and should receive adequate consideration at the hands of the Government. But instead of giving salaries of chemists to the Company we would propose that a special fellowship may be endowed for research at the new State or at the College Laboratory. The cost of the fellowship may be borne partly by the State and partly by the Company—the results to become the exclusive property of the Alembic Chemical Works Company, Ltd. We do not believe in doing the work gratis; the Company must suggest its problems and must contribute a part of the fellowship expenses. The Company must be serious before it asks Government for assistance for research and must be ready to contribute some funds. Such work may also be done for any other industry in the State. In the development of modern industries, chemistry plays an important part and the provision for chemical research is an absolute necessity. It is the primary duty of the State to provide for it. So far as we can see, there is no lack of work.

367. Besides the chemist the Department of Industries should be provided with a well-qualified Mechanical Engineer. We suggest the employment of a Mechanical Engineer because we think,

the Department should take, as stated below, steps for the organization of peripatetic parties, for the training of the artisans in improved methods of their professions. The Engineer will select tools and implements for the different trades and train demonstrators in their uses. He will supervise the working of the demonstrations and guide them. He may also act as an Inspector for the Schools of Handicrafts suggested elsewhere. Moreover he will act as a Technical Advisor to the Department and the people in the establishment of small factories, in the selection of machinery and their after-care, etc.

368. The Department will require other experts in ceramics, in tanning, etc.; but these may be temporarily engaged as required.

Other experts may be temporarily engaged.

369. The Workshop of the Kala-Bhavan should be utilized for experiments. The Kala-Bhavan though ill-equipped is an important institution and should be fully utilized by the Department of Industries. If some more machines are required they may be purchased. The staff of the Department should also be made available for advice. A small State like Baroda cannot afford to have separate institutions of the same kind for its different departments specially in their early formative stages. It is better that the existing facilities should be well-availed of in the beginning. For this purpose, we would recommend that a close co-operation should be arranged between the Department of Industries and the Kala-Bhavan, and workshop and the Laboratory of the latter should be made available for experiments. Already some work has been done as mentioned above. Since the last several years, both of them have been working together; Experiments for the manufacture of paints, soaps, brass and copper sheets have been made by the Department of Industries in the Kala-Bhavan and so far ample facilities have been given. We learn from the Director of Commerce that the staff of the Kala-Bhavan has also been several times called for advice, for improvements in dyeing and hand-loom industries and it has been ungrudgingly given. But full advantage of the Bhavan could not be taken as all its staff is not efficient and the Laboratory and workshop are not properly fitted up. As suggested below, this deficiency should be made up. The Government should pass orders that the Kala-Bhavan should give all the facilities to the Department of Industries for experiments.

The Kala-Bhavan should co-operate with the Department of Industries.

370. After making necessary experiments and investigations if any industries seem feasible capitalists may be persuaded to take up the propositions and where necessary some special concessions and privileges may be given. In the selection of capitalists as far as possible the State's subject should be given preference. The investigations will have been made with their money and they should get preference. But care should be taken that the men selected are good businessmen and would make success of the industry. In case, such men are not available, outside successful

Capitalists should be persuaded to start new Industries.

Indian industrialists should be approached. Some of the Baroda people are very good merchants but they have not much experience of the management of modern industries. If some outside industrialists come or start industries in co-operation with the local people or even independently, they may stimulate local enterprise or train them in new methods. For some time, therefore, the Department should devote special attention and induce outside capitalists to start industries. We are glad to observe that the activities of the Department are engaged in this direction and some good work is being done.

371. But if after all these efforts no capitalist comes forward because the industry is new and he feels shy, the State, if it is convinced of the usefulness and the possibility of the industry, should not hesitate to pioneer it. During 1890 to 1895, several industries were started and the results so far have been successful. Most of them are working satisfactorily and in one case has stimulated private enterprise. When necessary, the old policy should be revived.

Pioneering.

(XII.) Boiler and Factory Inspection.

372. The inspection of boilers and prime movers in the State is entrusted to the Boiler Inspector who works under the Director of Commerce and Industry. The Boiler Inspector is also the Inspector of Factories but the administration of the Factory Act is entrusted to the Sar Suba. When the Act was passed the inspection of factories was entrusted to the Naib Subas in their jurisdiction. This work has now been entrusted to the Boiler Inspector. The administration of the Act, therefore, should be entrusted to the Director of Industries who is more interested in the supervision of the factories than the Sar Suba.

The administration of the Factory Act should be entrusted to the Director of Industries.

(XIII.) Cottage Industries.

373. As may be seen from the statistics given in para. 19 of this Report every decade shows that under the competition of foreign industries the old industries are dying and the population is more and more thrown on the ill-organised agriculture. Hand-loom weavers, tanners, potters, metal workers and many other artisans are slowly leaving their professions. At the same time, no new handicrafts have grown that are usually seen as adjuncts to modern industrial life—handicrafts and small workshops that may be seen to a small extent in some of the big cities like Bombay and Calcutta. In the new adjustment of our industrial life, from the purely agricultural type of Society to the new industrial organisation based on modern science and machinery, some of the hand-loom weaver can never hope to compete with the power looms; he industries are certainly bound to disappear. The ordinary hand-may hold his own in special weaves such as *Patola* and *Sari* but that, too, not for a long time. Ultimately most of them will dis-

Practical Demonstration has a good effect.

appear. All the same, there are ways in which the process of disappearance can be delayed and that improvements could be made in their method of doing their business—technical and financial. They may be taught and given improved implements—a fly-shuttle hand-loom instead of the old pit-loom; a paddle potter's wheel instead of the old wheel. There may be found improved tools and machines for every craft for carpenters, smiths, shoe-makers, weavers, etc. By opening schools of handicrafts under the supervision of a trained master craftsman, the artisans and their sons may be trained in improved methods. Several such schools have been working in India—the School of Handicrafts at Nagpur, the Shoe-making School at Cawnpore; the Leather Curing Class at Madras. There are several Trade Schools at Lahore, Lucknow and at other places. In this connection, we are glad to observe that a Committee has recently been appointed to report on the introduction of the Schools of Handicrafts. Along with these schools, peripatetic demonstration parties may be also organised that may go from town to town, from village to village and demonstrate the uses of these tools and implements to workmen who cannot come to schools. Such peripatetic demonstration parties have been constituted for carpentry, tanning, brass-casting, etc., in the United Provinces and in Mysore. In this State, also, similar parties have been organised for hand-loom weaving. Similar classes and parties may be organised here after careful study of each handicraft. The Department of Industries is also taking steps to organise demonstrations in improved tanning and wool-weaving. Some other crafts such as carpentry, smithy, etc., may also be taught by such parties. We need not lay down the whole programme here but it would suggest itself while working out details.

The ordinary Indian workman is slovenly, he has no sense of proportion, he has no value of time and precision in execution and he hardly takes proper care of his tools. Care, therefore, should be taken that in these schools and demonstrations special emphasis is laid to the practical side of his training. He must be trained as a workman first. He may be given literary and theoretical training but just enough for his immediate purposes.

374. For the improvement of the business-side of the handicrafts, to enable the artisans to purchase their materials at a reasonable price and to dispose of their finished products to the best advantage and to provide them with funds

Co-operative Societies can
suit the requirements of
the artisans.

for their business at a reasonable rate of interest we would recommend that Co-operative Societies—Societies for Credit, sale and purchase—are very well-suited. They have proved of very great value all over the world and similar Societies should be organised for them here. There are already 15 Weavers' and 4 Tanners' Societies. All of these are Credit Societies and are doing small business. The Weavers' Societies purchase yarn collectively but the business does not amount to much. No arrangement has been made for common sale. We fully realise that the artisans, as a class, are very conservative and are slow to move and introduce

reforms. We know, too, that it took months before a fly-shuttle loom was accepted at Pattan; we know, too, that efforts were made for years at Pattan—a good weaving centre—to organise a yarn store but without success. This was inevitable. But we would suggest that effort should be continued for years and we are sure that ultimately good results would be obtained.

(XIV.) Primary Schools for the sons of Artisans.

375. Along with the Schools of Handicrafts but more as a preliminary to them special schools for the sons of artisans should be opened at suitable centres as has been done at Amreli.

Primary Schools for the sons of Artisans.

In that school, all the boys of the artisans of the town of the compulsory age are placed. This school was at first a branch of the Kala-Bhavan (School of Arts at Baroda), the last one existing of the many started some years back. At that school very few boys used to attend and, therefore, the school hours were changed so that the boys attending the primary and other schools may go to it during their off hours, in the morning and evening. A number of boys who had some liking for handicrafts used to attend it and to them the school served more as a Manual Training Class than as a School of Arts. It had three courses of study—weaving, carpentry and dyeing and to a very small extent smithy. The school continued to work on the old lines for a few years and then it was suggested that instead of the boys attending two schools, one in the morning and another in the after-noon, it was better that the literary education that was given to the boys in the primary school, was also given in the Kala-Bhavan and all the sons of artisans from the town brought together. The suggestion was approved by the Department of Education and all the necessary facilities for studies were provided in the school and it has now been working as a primary school under the Compulsory Education Act. The same industrial classes are continued and the courses are so regulated that the boys get training in both. The results so far have been encouraging; the boys have shown greater aptitude in their studies; and they get chances for learning their own hereditary trades which pleases their parents. The equipment of the school is not very adequate, it is not supplied with all the modern tools and implements; at the same time, there is one danger the school is likely to run in. In order to reduce the cost of management it is inclined to cater for outside orders and thus commercialise the institution and sacrifice the teaching of the crafts, and ultimately ruin the efficiency of teaching. Therefore, this danger must be specially guarded against. We learn that the Department of Education is keenly watching the progress of the school and is also training some more teachers for opening similar schools at other places. But before multiplying any new schools we would lay down two conditions that should be observed in their management. The first is that they must be supplied with modern tools; and secondly, there should be a good inspector to supervise their work.

376. In order to carry out these two suggestions we propose that a special branch may be opened in the Department of Industries for the development of handicrafts with a trained mechanic in charge of it. The Department would be in touch with the industrial life and its requirements and already some work is being done therein of a similar nature. Therefore, it is best fitted to carry it out. The man in charge of this work may act as an inspector of the primary industrial schools which would continue to remain under the Department of Education, as at present.

A branch of handicrafts should be organised in the Department of Industries.

(XV.) Industrial Suburbs and the Housing of Labour.

377. Except at Baroda, and in a small way at Petlad, Dabhoi and Billimora there are no large congregations of factories; but these and other towns are likely to grow and more factories are likely to be established. If we want to avoid the creation of slums that are to be seen all over Europe and their demoralising effects upon labour, steps should be taken beforehand for the creation of industrial suburbs and the housing of labour. We must profit by experience and mistakes of the West and of some of the cities of India and try to take measures that would save us from grave situation that may be created later on. Therefore, we propose that the following measures should be taken to avoid starting of factories in congested areas and to provide housing facilities near the factory at the time a factory is started.

Industrial suburbs and the housing of the labour.

(a) That a survey should be made of all the important towns where some industries exist and where some more are likely to be started. In this survey the area where an industrial suburb is to be created should be marked and the land should be prohibited from being used for any other purpose without special Government permission.

(b) In the Rules made under the Land Revenue Code the permission of the Vahiwatdar is required before a factory is erected. Under these rules the Vahiwatdar only decides whether the factory is likely to be a nuisance or if there is going to be any other objection to the location of the factory at the site selected. He has no authority to suggest the best suitable site for the factory. We therefore, suggest that the rules should be revised and fresh rules should be added, so as to provide town planning and the acquisition of land for industries. The town planning may be done by a competent Engineer and the plans should be finally prepared in consultation with the Department of Industries and approved by the Government. The Department of Industries should be entrusted with the administration of the rules. The rules should provide also for the acquisition of land for the industries and for the construction of roads and the provision of other facilities.

(c) All applications for the selection of factory sites and their approval should go to the Vahiwatdar in the first instance as

at present; but the final decision should be given by the Director of Industries.

(d) All the hand-industries and small home industries that use oil or electricity as fuel may be permitted within the town area but the industries that use coal and that employ more than 100 men should be, as far as possible, located outside the towns and in places specially selected.

(e) When a concern applies for the approval of a factory site it must submit a statement as to how it proposes to house its labour. After satisfying that enough provision has been made permission to build the factory may be given.

(f) It may not be possible for a few and a small factory to make adequate provision for the housing of labour as it may not be in a position to invest all the necessary funds. In such a case, to insist upon the provision of housing for the labour would be killing the industry. There may be industries such as the Cotton Gins and Presses that employ labour during the season and for which there is not permanent labour. Rules should, therefore, provide to meet these difficulties and it should suffice if the factory has got or acquired the land necessary for the housing of labour later on. In special cases, arrangements may be made for the granting of the Government loans at a very low rate of interest for the housing of the labour.

If these precautions are observed we feel confident that congestion in cities would be avoided and the health of the labouring population would not suffer.

(XVI). Industrial Museums and Exhibitions.

378. In 1892, under the Presidentship of Mr. Bruce, a Committee was appointed to work out the details of a Museum and in 1894 the foundation for the State Museum at Baroda was laid. In the beginning, the services of an expert from England were engaged to purchase samples and arrange them. The collection was at first located in the Central Pavilion in the Public Park; and in about 1898, when the present building was ready it was transferred there. The building has since a few years been found to be insufficient for the growing collection; so another wing has been built for the Picture Gallery.

379. The Museum is divided into two sections, Science and Arts. In the Science Section, Geology and Biology Departments are well-equipped and are a great help, to the students of the Baroda College. In the Arts section, there is a special wing for Baroda industries. This collection, however, is not complete and some more exhibits of Baroda economic products are needed.

Its further development.

380. An Industrial Section should be organised in connection with the Baroda Museum. It should consist of the following sections:—

- Industrial Museums.*
- (a) Agriculture: Farm products and machinery.
 - (b) Forestry: Products and their use.

(c) Industrial arts of Baroda.

(d) Industries:—

- (1) Natural resources and raw materials
- (2) Their industrial uses.
- (3) Information regarding other industries with the necessary charts, maps, models, etc. A first class chemist or engineer should be placed in charge of this section who can reply to industrial inquiries and give regular lectures on and demonstrations of industrial subjects.
- (4) Collection of the samples of the Baroda arts and industries.

381. Along with the Museum and as a part of it, a fully equipped Technical Library should be organised and a complete set of books and magazines on industries, that it is possible to develop, should be specially kept.

382. We are informed that in 1915, a Committee was appointed by the Dewan to inquire what improvements and extensions could be made in the Central Museum at Baroda. The Committee, after careful inquiry, had suggested that a special industrial section may be organised. As suggested above, we learn that the Report is still before Government and is under consideration. We strongly support the recommendations of the Committee in this matter.

383. Similar Museums should be started at the District Head Quarters but on a very small scale. There is already one Agricultural Museum at Mehsana, organised by the District Local Board. Some alterations should be made therein to include exhibits of local industries and raw materials. A small beginning has been made at Naosari which requires further development.

384. Along with the Museum or as a part of it a Sales Depot of Baroda Arts and Industries should be opened. A small beginning has been made at the Museum at Baroda but unfortunately, the collection has been relegated to an unimportant corner. The collection should be placed in a prominent place so as to attract the attention of the visitors.

385. The first Industrial Exhibition was held in the State in 1881 and a second one in 1917. During the interval one exhibition was held in 1910 at Naosari under the auspices of the District Board and another at Baroda.

386. We propose that one exhibition should be held immediately after the cessation of the War and thereafter at regular intervals of every five years. Such periodic exhibitions may also be held with advantage in each of the four District towns.

387. The exhibitions must be few but they should be well-organised with a definite purpose preceded by careful work. Collection of all sorts of exhibits without any reason should be avoided. Exhibits may be few but well-chosen with a definite object. In order that this work may be well done preparations should be made fully a year or six months ahead to enable the Committee of the Exhibition to settle plans and carry out details. Industrial exhibitions, if properly managed, serve a very useful purpose. Not only all the raw materials and their uses could be exhibited but also the possibilities of new industries could be suggested. Local industries that are sometimes lying unknown get a chance for advertisement and get easily known. Apart from this, exhibition is an education in itself. We, would, therefore, suggest that a more liberal policy in organising exhibitions should be followed.

(XVII). Technical Education.

388. A Committee was formed in November, 1888, to consider and report upon the measures to be adopted in connection with the establishment of a Technical School; and Prof. T. K. Gajjar, M.A., B.Sc., was entrusted with the work of drawing up curriculum for the different branches of the Institute.

His Highness the Maharaja, after carefully considering the scheme submitted to him, passed the following order on 25th March, 1890:—

“The project of diffusing general and technical knowledge through the Vernaculars has been under the consideration of Government. The proposal of Mr. Gajjar to start such an Institution on the Grant-in-aid principle has been considered, and it is thought desirable on the whole that the experiment should be made as a State concern. It is accordingly directed that a Technical Institution should be opened at Baroda where education of the hand and the eye will be attempted side by side with that of the mind, and where instruction will be imparted mainly through the Vernaculars. The object is to help the people to improve the existing industries and to introduce new ones that may be remunerative. It is desirable that a modest beginning should be made and scope of the Institution should accordingly be restricted for the present to teaching drawing, bleaching, dyeing and calico-printing and carpentry. The course of instruction should combine theory and practice so as to turn out a more skilful artisan than at present.”

* * * * *

“Along with this central institution, dyeing schools should be opened in the Districts, at places to be fixed by the Department.”

Accordingly, the Kala-Bhavan (School of Arts) was started in August, 1890, and the existing Training School, including the agricultural class, was amalgamated with it.

389. The school has now on its roll 400 students, some of them coming from the remotest parts of India. It has three years' fully graduated and systematic courses of instruction in eight branches, *viz.*, (1) Civil Engineering, (2) Mechanical Engineering, (3) Chemical Technology, (specially of dyeing, bleaching and textile printing), (4) Industrial Chemistry, (5) Textile manufacture, chiefly Weaving Technology, (6) Fine Arts (including Process Work), (7) Architecture, (8) Banking and Commerce. Besides these regular courses there are three demonstrators teaching repoussé work, wood-carving and art enamelling. Except the School of Commerce which is conducted in English, most of the classes are conducted in Gujarati. Besides the Diploma courses special one or two years' short courses are offered in most of the Departments. Those who are artisans and those who do not want complete training are accepted as free apprentices in the Industrial Art Workshops. So also free apprenticeship is offered in carpentry, mechanical engineering, dyeing and weaving to a few young men in each Department. In order to keep the students in constant touch with industrial conditions they are frequently taken on visits to local and outside industries. The Kala-Bhavan has got a well-equipped library containing useful technical books and magazines.

390. It was the desire of His Highness the Maharaja that the technical education in the State should be wide as well as deep and should reach all important villages with industrial possibilities. With this view the District Industrial Schools were established soon after the opening of the Kala-Bhavan. Most of them were mono-technic schools teaching some one art or industry, such as dyeing or weaving. These schools were opened at Dabhoi, Padra, Kathore, Petlad, Vaso and Pattan—places where these industries were flourishing. At present, the Kala-Bhavan has two District Schools, one at Amreli with weaving, dyeing and carpentry classes, and the other at Dabhoi teaching weaving and dyeing.

391. During the 25 years of its career, the Kala-Bhavan has sent out nearly a thousand graduates fully trained in the various arts and industries.

Kala-Bhavan and Industrial development. It has supplied a large number of Mechanical Engineers, Dyers, Weavers, etc., to Gujarat and Dyers specially through the whole of India. The dye-houses now established, large and small, have most of them got their inspiration and guidance from the Dyeing School of the Kala-Bhavan. "Professor Gajjar, who was very keen on the promotion of chemical industries, by his own work and with the help of Professor Shumaker and Dr. Erhardt who were brought from Germany to work on the Kala-Bhavan staff organised a very successful school of chemical technology, which has been supplying dye-house chemists to the country for the last many years."

392. As foundation to technical study, classes in manual training and drawing have been established in some of the important primary schools of the State, so that boys from their early days may get a liking for an industrial career. There are at present several manual training classes attached to the Vernacular schools.

Besides these State Industrial Schools, there is one Grant-in-aid Industrial School, "The J. N. Tata Hunnar Shala," at Naosari. It has classes in Mechanical Engineering, Carpentry, etc.

393. His Highness the Maharaja is a firm believer in the benefits that accrue from foreign travel and training at the best Universities of Europe, America and Japan. During the last 25 years, several students have been sent to these countries to be trained in various arts and industries. If the number of students sent for Medicine, Law and higher education is excluded (and this number is considerable) those that were sent for training in Industries and Arts come to 25:—

Technical scholarships.

- 4 Agriculture.
- 6 Industries (Cabinet-making, watch-making, chemical technology, pottery, mining, etc.).
- 6 Engineering (civil, mechanical, electrical and sanitary).
- 2 Forestry.
- 2 Gardening.
- 5 Economics and sociology.

25.

Some of these State scholars were graduates of Indian Universities while others were sons of artisans trained in the local Schools of Arts. In addition to these, promising artisans (7) have been trained up in the Arts Schools of Lahore, Madras, etc., in industrial arts. Most of the scholars trained with State scholarships are "now serving the State with credit or finding profitable employment in other parts of India."

394. Since a few years, a scheme of loan funds has been started to send promising graduates of Indian Universities to foreign countries "to learn the methods of modern industries." In the selection of the students for foreign training it may be mentioned that no distinction of caste or creed is observed. Sons of artisans are also selected so that hereditary skill may get further developed.

Loan fund: Training of artisans.

395. *Recommendation*:—(I). A part of the Kala-Bavan staff is not very well-qualified. Some of the members are very old hands, under-paid and their knowledge is very antiquated. Therefore, better staff should be provided.

The Kala-Bhavan, it is true, is intended to train young men from secondary schools and, therefore, the standard of training is very

low, but even for these boys the class of men employed as teachers are very inferior; very recently, some better qualified men have been employed; but some of the old people still remain who should be replaced. The efficiency of the training will ultimately depend upon the qualifications of the teachers and these should be first-rate men.

396. (II). As stated above, the standard of teaching has been kept very low. This should be raised. **Graduates in Science should be trained in Applied Chemistry.** Provision should be made for the training of graduates in Science from Universities in Applied Chemistry so that better men could be made available for industrial development.

397. (III). The Department of Applied Chemistry should be developed. At present, only instructions in dyeing have been given. Arrangements are under progress for the opening of the Departments in Applied Chemistry. **The Department of Applied Chemistry should be developed.**

Chemistry of Oil and Fats:—This should be pushed and the necessary staff and equipment should be provided. The Laboratory of the Institute "exists only in name" as has been said by an expert who visited it very recently. This should be improved to suit the requirements of the Institute in higher standards and for industrial experiments that may have to be done for the Department of Industries.

398. (IV). At present, in the mechanical and other workshops too much attention is paid to outside orders, in fact, they are commercialised to such an extent that the efficiency of teaching has been sacrificed and any proposal for experiments has been unfavourably considered and grudgingly undertaken. This should be stopped. After all, in a large institution like the Kala-Bhavan a few rupees' profit more or less, should not matter; it should not come in the way of the real industrial training. The people of the State have hardly any facilities where they could go and have small experiments made. This facility the Kala-Bhavan should provide fully, ungrudgingly and sympathetically. **The Kala-Bhavan should extend its help to the people of the State.**

399. (V) It may not be possible to utilize the Kala-Bhavan staff for all the experimental work of the Department of Industries as it will have to devote its attention to the teaching work first. But they may be induced to help the Department in their leisure hours for which some allowance may be paid if results are shown. But, for all important work the Department of Industries should engage its own experts, the Kala-Bhavan giving the use of its Laboratories and the workshops. By this co-operation the State will be spared some unnecessary expenses, the teachers will get a chance to do some research work and earn some money and the boys will get a chance for practical training. We, therefore, strongly suggest that an efficient working arrangements should be made with the Depart- **An efficient working arrangement should be made with the Department of Education or the Institute may be placed under the Department of Industries.**

ment of Education, under which the Kala-Bhavan is at present working; or if necessary, the Institute may be placed under the Department of Industries.

(XVIII.) Railways and Ports.

400. The railway policy of His Highness the Maharaja Saheb has been so very thorough-going that we have hardly any suggestions to make. Most Talukas of the State have now been connected with railways and if some remain it is due to circumstances beyond the control of the State. The territories of the Raj are interspersed with those of the British as well as other Indian States and unless these co-operate it becomes difficult to connect the outlying Talukas with railways. The two important railways—Kodinar and Dwarka—have been held over till the other Kathiawad States are ready. In other places, the War has come in the way as the cost of materials has gone very high.

401. In the course of the inquiry, some of the witnesses have suggested the construction of a few railway lines—mostly the extension of the existing lines. From the materials at our disposal we cannot give any definite opinion as to their feasibility. We would, therefore, leave the proposals to be investigated by the Railway Department and if any are found financially possible the Government orders may be obtained. A list of such lines is given in Appendix II. (2-6).

402. There are four ports—two river and two sea-ports—in the State. The river ports are Billimora and Naosari and the sea-ports are Beyt and Velan. Several witnesses have told us that the river ports require improvement as silt has accumulated and made them shallow. The Public Works Department may be asked to inspect them and suggest such improvements as are possible.

403. We know that it is the intention of His Highness the Maharaja Saheb to develop the Kathiawad sea-ports; for several years soundings were taken but the actual development has been postponed till the railways connecting the ports could be constructed and till a Marine Engineer is available. We strongly support the policy of His Highness' Government in these undertakings. Both the Velan and Beyt ports are commercially very important and will materially benefit the Talukas to be served by them.

CHAPTER VI

Financial Facilities.

(I). Banking.

404. Before 1875, all the banking in the State was carried on by *Shroffs*. All the State funds were deposited with four prominent *Sowkars* of Baroda. About the year 1876, State treasuries were organised and the State funds were withdrawn from private *Shroffs*. This necessarily caused scarcity of fluid capital and the State felt the necessity of organising Commercial Banks to help both the *Shroffs* and the general public. In 1884, the Baroda Pedhi was started with a capital of Rs. 3,00,000 divided into 600 shares of Rs. 500 each. Half of these shares were taken by Government and the other half by the people of Baroda. As special concessions (i) the use of a State building free of rent, (ii) a cash credit of Rs. 3 lakhs at 3 per cent. and some other minor privileges were granted. The Pedhi (Bank) was managed by a Board of five Directors consisting of a President and two Directors nominated by Government and two others by the shareholders. It was authorised to lend money on the usual Banking principles. The scope of this Bank was very limited and it was not in a condition to meet the growing needs of commerce and industry. For several years, therefore, it was in contemplation either to have another large Bank or to invite one of the Bombay Banks to open a branch here. In 1908, it was decided to start a new Bank at Baroda and the Pedhi being no longer required was sent into voluntary liquidation. All along its career the old Bank was working successfully, and when it was closed shareholders received about 30 per cent. over and above their share capital.

405. A similar Bank was started at Visnagar about the same time. But being away from the Head Quarters and under the control of the District Collector (Suba) who has always multifarious duties to perform, it was not well-managed. The Directors were not local men. Some of the investments were risky and the famine of 1899 ruined some of the Bank's clients. In 1904 or so, this Pedhi was closed and sent into liquidation. The share capital was fully realised and returned to shareholders.

406. During all these years, the needs of Commerce and Industries were growing and the indigenous Shroff system was found to be inadequate. All over the State—in all the Taluka and other important towns—are to be found *Shroffs* or bankers whose principal business is to

finance trade and commerce and do *hundi* business. They also receive deposits from the people. Most of them have got agents in principal towns of Gujarat and Bombay and some have opened their own offices at these places. Prior to 1880, all of them were doing simple banking business but since then they are slowly entering into industries and are starting cotton gins and presses and are doing share, bullion and produce business. A few of them have also started Cotton Mills. While this process was going on some more industries were started within the State and, therefore, demand for loanable capital was increasing. Scarcity of funds was naturally felt.

407. The method of business of these *Shroffs* was as Method of business of the under:—
Shroffs.

- (1) Loans were made among the *Shroffs* themselves at 6 per cent. or less, 6 per cent. being the standard rate. For this inter-shroff accommodation no security was demanded, not even a pro-note.
- (2) For loans to other merchants usually a bond was taken secured by some movable or immovable property. Personal surety of someone else was very seldom taken. The rate of interest in case of all respectable merchants was 6 per cent; but along with it $\frac{3}{4}$ th or $\frac{1}{2}$ per cent. commission was charged every time money was drawn. All these charges came to from 8 to 12 per cent. All these loans were for short period—for a season.
- (3) *Hundis* of approved parties were accepted without any endorsements. This was certainly good for small trade and local commerce but wholly inadequate for modern industries.

408. Therefore, when it was found that existing facilities were inadequate to meet the growing needs of commerce and industry, the Bank of Baroda, Ltd., was started in 1908. The following is the list of concessions granted:—

Organisation of the Bank of Baroda and the concessions granted to it.

- “(1) Government will deposit with the Bank without interest an amount equal to $(\frac{1}{4})$ one-fourth of the paid-up capital, but not exceeding $2\frac{1}{2}$ lakhs of rupees.
- (2) Government will maintain deposits with the Bank equal in amount to three-fourths of the paid-up capital but not exceeding $7\frac{1}{2}$ lakhs of rupees in any case at the rate of 4 per cent. per annum if and when considered necessary by the Directors, provided that the Bank maintains at all times within the State assets equal to the amount so deposited.
- (3) The aforesaid concessions shall hold good for a period of fifteen years.
- (4) Government will pay to the Bank annually one-half of the salaries and expenses of management for a period of

five years on condition that the Bank engages an expert manager and with the further proviso that the sum so paid shall not exceed Rs. 10,000 per annum.

- (5) Government will turn over to the Bank from time to time such proportion of the State's banking business (*i.e.*, the receipt, remittance, collection, and payment of money or securities and other matters usually transacted by bankers for their customers) as the prosperity and condition of the Bank may warrant and as may be agreed to between themselves and the Directors.
- (6) Government will appoint auditors to audit the books, including the ascertainment of assets under clause 2 above, and accounts pertaining to its own business with the Bank, such audit to be at their expense; and it shall interpose no other supervision or interference with the Bank's affairs."

409 The Bank has a paid up share capital of Rs. 20,00,000 and a total working capital of over Rs. 2,00,00,000. It has financed almost all the important industries of the State. The State Treasury at Baroda has been transferred to it and the disbursements of all the funds at Baroda are made therefrom. It has opened branches at Mehsana, Naosari, Ahmedabad and Bombay.

410. In view of the discussion that follows it is necessary to mention here the specific objects with which the Bank was inaugurated. These objects can be very clearly gathered from the statements made by His Highness the Maharaja Saheb at the time of opening ceremony of the Bank on the 19th July, 1908.

Working of the Bank of Baroda.
Objects for which the Bank was organised.

"The concessions which have been granted by the Baroda Government are the result of mature deliberation, and should be sufficiently convincing evidence of my own attitude toward the project. My motive has been simply and solely to satisfy what seemed to me a natural want. The Government itself has no immediate need of such an Institution though I am not without expectation that it will prove an agency of great usefulness to the administration. The one primary object is to satisfy a demand which the people themselves have made upon us from time to time for such a financial institution of their own. . . ."

2: At the same time, I must say that the granting of these large concessions and the assignment of the control to the people themselves imposes upon them and their representatives on the Board of Directors—a solemn responsibility to carry out faithfully and conscientiously the objects for which the Bank is founded, and to see that no motives of personal animosity or personal aggrandisement creep in to mar the harmonious and businesslike management of the bank's affairs.

The Chairman of the Board of Directors of the Bank in his speech, said as under:—

"Our object is to encourage and promote the application of capital to industries as far as possible within the State itself, and a separate Bank alone will meet our needs. We will be in a position to closely study local requirements and local credit and thus be able to help local merchants with greater confidence than any outside Bank can be."

* * * * *

"This, we consider, is quite fair and, indeed, we owe it to His Highness' subjects because the subsidy granted by His Highness' Government ought to benefit first of all His Highness' subjects. And I am sure nothing will give greater pleasure to His Highness himself than to find that the benefits of the large concessions His Highness has given mainly with the object of having a Bank in the State to help indigenous industries and *to train his subjects in practical banking*, have remained with his own subjects."

The Prospectus of the Bank also contained the following statement:—

"Though the main operations of the Bank will be carried on in Baroda State, it is intended to open branches in Bombay and other centres of trade and industry in Gujarat, so that the struggling enterprizes of these parts may not have to depend for capital upon Bombay."

411. In about a couple of years after the opening of the Bank, complaints began to come from the subjects of His Highness the Maharaja. These complaints found expression in the Public Press, in the interpellations in the *Dharasabha*, in the resolutions of the Industrial Advisory Committee as well as in the Panchayat Parishads.

Complaints of the people
and the investigation.

Similar representations were made by several witnesses that appeared before the Committee specially witnesses from Baroda, Kadi and Naosari where the Bank has been working. Since it was the function of this Committee to investigate the banking problem and since the Bank was inaugurated with the avowed object of developing local trade and commerce we made special efforts to find out how far these complaints were justifiable. In this inquiry we were assisted by our colleague Mr. M. H. Kantawala, who is a Director of the Bank of Baroda, Ltd., and who showed every desire to find out the truth and enlighten us on many points and gave information that was within his knowledge. The managers of the branches of the Bank at Mehsana and Naosari were also examined; they too gave such information as was possible.

412. Before proceeding further, it may be mentioned here that most of the complaints have come from the old *Shroffs*, specially of Baroda, who have been hit hard in their business by the competition of the Bank. The deposits that they used to receive at a very low rate of interest have been withdrawn and taken over to the Bank and

Nature of Complaints.

naturally they could not get the same form of accommodation from the Bank as they used to get from the other *Shroffs*. Some industrialists have also complained who have had to pay the expenses of a clerk placed by the Bank in charge of the goods given in custody.

All the complaints may be reduced to the following few points:—

- (1) That the Bank demands two names on pro-notes.
- (2) That the rate of interest charged by the Bank is high.
- (3) The agencies do not lend but accept deposits.
- (4) That more branches are needed.
- (5) That the Bank should open warehouses at trade centres, and
- (6) That loans are given for a short term.

It may be at once said that most of the suggestions are unsound and against the modern system of Commercial Banking. However, we will take each point and see how far it is practical.

413. I. *Two names paper demanded*: The Bank of Baroda, Ltd., is a Commercial Bank and is worked on deposits received for a short period from three months to twelve. Therefore, it has to invest funds for a short period and against securities that could be easily liquidated. It cannot lend against the security of immovable property. It can lend on the endorsement of approved parties or against the security of liquid or easily realisable assets.

It cannot, under any circumstance, lend without any security. It does give temporary over-drafts for a small amount in a special case but it cannot adopt the system generally. This demand accustomed to the old and obsolete method of banking. We can come, as mentioned above, from the *Shroffs*, who have been not recommend the Bank to modify the accepted principles of banking to help people who would not move with the times.

414. (2) *High rate of interest*: The Bank charges from 6 to 7½ per cent. on twelve month loans, and from 8 to 9 per cent. on short term loans according to the nature of the security offered. But the old *Shroffs* and other people accustomed to the old system demand loans at 6 per cent. The Bank has to pay 5 to 5½ per cent. on deposits and certainly it cannot lend at 6 per cent. It is unfortunate that the merchants while paying to *Shroffs* an open rate of 6 per cent. are willing to pay 2 or 3 per cent. in commission to the *Shroffs*, but are not ready to pay a straight rate of 7 or 8 per cent. to the Bank.

415. (3) and (4) *Agencies do not lend*: We find that this complaint is partly true. Unfortunately the present system of Branch Banking in India is very defective. The branches are primarily intended for receiving deposits which are taken to the Head Office and

Defective branch-banking in India. Canadian system preferable.

invested in places best suited to the Bank's business. No special efforts are made to lend funds in the area of operation of the branch. Usually a junior clerk is placed in charge of it, who is not trained in banking but is usually a second-rate accountant. It is not his function to develop the business of the Bank. It is true he forwards to the Head Office loan applications with his opinion. But a manager sitting at a distance cannot fairly judge the credit of an absent client. Therefore, the merchants get disinclined to do business with the Bank. We, therefore, suggest that the Bank of Baroda should follow the Canadian system of Branch Banking and employ trained bankers and give them some independent powers of negotiating small loans. In this connection, we beg to quote a small paragraph from the *Annals of the American Academy of Political and Social Science*, Vol. XXXVI., No. 3, pp. 157-159 (Banking problems).

"There is a wide difference between the operations of a branch of this kind and those of a newly opened Office of a large Canadian Bank. The Canadian Manager starts to lend at discount at once. In fact, that is the main part of his business except in the little towns and villages in quiet agricultural districts in Eastern Canada. The matter of the Bank's having funds to lend for the regular business of the local borrowers does not trouble him at all, scarcely even during periods of stringency. The only things he concerns himself about are the solvency and reliability of the borrower and the legitimacy of the transaction in which the Bank's money is to be embarked. Provided the term of the loan is short, the manager of a good Bank in a small place acts on his own responsibility in lending up to say \$1,000. At a larger branch, he would lend up to a higher figure. A credit of \$1,000 covers fairly well all the requirements of the less important traders at a country village. For amounts exceeding that sum credits are applied for; and if the applicant is in a satisfactory position head-office will authorize the local manager to take his paper up to an agreed-upon maximum, subject to certain rules and stipulations. Then the discounted paper is invariably held by the branch itself—if it is payable locally, and the Canadian Banks do not rediscount. So, if a borrower in a Canadian village goes to his Bank with \$500 to pay off his note a month ahead of its maturity the manager can always produce the note on the instant from the bill-case. He does not have to ask the man to wait till he can get it back from head-office."

"Deposits are a secondary consideration. Of course, all branches strive to build up their deposit balances, as the deposits constitute the main source whence the funds for lending are derived. *But the energies of the branch manager are mainly directed towards the acquisition of desirable discount*

account; and the bulk of the correspondence with head-office pertains to that department of the Bank's business. It is found also that a policy of this kind results incidentally in the quickest development and growth of deposits. That is to say a branch that provides fully for the borrowing need of the community in which it is located, at moderate rates, will usually be much more successful in building up its deposits than it would be if it starved the local borrowers and tried to develop the local deposit department only.

"In times of great stringency, the regular customers of the branch get their credits from head-office very much as usual, but they are required to keep their borrowings within as small a compass as possible, and are discouraged from embarking in new ventures or extensions necessitating borrowed money. Also the branch manager is asked to refrain from canvassing or a campaigning for important new discount accounts until the money situation relaxes."

If this system is followed, we believe the people of the State would get better banking facilities, as was expected. More branches could also be opened, and if it does not pay the Bank in the beginning, the Government may share the cost in initial stages. Since it is not possible to have new independent Banks all over the State, it is better that the Bank of Baroda should extend the sphere of operations and try to reach all the important industrial centres such as Billimora, Amreli, Dabhoi, etc. For want of business demands the Bank has to invest nearly four-fifths of its funds outside the State. It is desirable for the economic development of the State that this amount should, as far as possible, remain within it. At present, some of the business people are unwilling to have branches of the Bank in their locality. They are afraid that the Bank will take away local deposits and create scarcity of funds. We, therefore, suggest that negotiations may be started with the Bank and some arrangement be made so that more branches be started in the State which should work on the Canadian system and interest themselves in the development of local trade and industry. If this system is adopted, small merchants and traders would easily get the benefit.

416. (5) *Warehouses*: There are certain important trade-centres—such as Mehsana, Kalol, Amreli, Baroda, Dabhoi, Billimora, etc., where if warehousing facilities are available local trade and industries could be developed, and the small merchant would get a chance to do good business, provided banking facilities are available. Since banking and warehousing should go together it was suggested by the Department of Commerce and Industry to the Bank of Baroda that it should build some small warehouses in one or two places. The Bank of Baroda has been found unwilling to build any, though we have been assured by our colleague Mr. Kantawala that the Bank would be prepared to hire godowns if business were forthcoming. If private warehousing companies were started, their certificates would not be accepted by the Bank

Necessity of building warehouses.

as security for loans. The matter, however, should be brought to the notice of the Bank once more and if the Bank is still found unwilling, the State ought to build one or two warehouses of its own at one or two trade centres and rent them to the Bank. In the absence of such facilities the raw products are shipped to ports as soon as they are in the market, the result being that the trade is spasmodic and the small industries have no opportunities of supplying their needs.

417. (6) *Loans are given for short periods:* There have been complaints from some of the industries that the Bank grants only short-term loans which are not suitable for the needs of industries. The organisation of the Bank is such that it cannot afford to lock up its funds for a long period, more so because they would require some mortgage security which is opposed to the principles of Commercial Banking. The Baroda Bank is already financing a few industrial concerns with twelve month loans subject to renewal. This question then brings us to the consideration of the question of an Industrial Bank.

418. Before we consider this it is necessary to show how the State in co-operation with the Bank has provided facilities for long term loans to a few industries. A short history of the same may also be given as it would help us in arriving at some practical solution of this important question.

419. In the absence of proper banking facilities in the State, His Highness has considered it a part of the duty of his Government to grant loans to industrial enterprizes on reasonable terms. In 1891-92, a sum of Rs. 1,50,000 was placed at the disposal of the Revenue Commissioner to be loaned at 3 per cent. to new industries. This sum was, however, increased to Rs. 3 lakhs in the year 1892-93. In the four years after the inauguration of this policy, a sum of Rs. 2,32,000 was loaned to 13 merchants. Most of these concerns were flour, rice and oil mills, the rest being small concerns manufacturing scents, oils, soaps, etc. Unfortunately, as most of these factories failed in a few years the loans had to be recalled, the State suffering a loss of a few thousands in the whole undertaking. Some of these factories were not *bona fide*, they were started just to get Government assistance which was given by our enthusiastic officers without adequate inquiries either into the nature of the industry or the security offered.

420. Discouraged by the failure of these ventures the State granted no more loans for a few years. In the year 1908-09, however, when better class merchants came forward to start important industries, the loan system was revived and Rs. 2,90,000 were given to three concerns, two of these being Cotton Mills. When the Bank of Baroda was organised in the year 1909, these, as they fell due were withdrawn and the concerns were asked to go to

the Bank for financial assistance. However, the State has laid down that in special deserving cases it is prepared to grant loans at reasonable rates and for a sufficiently long period. A Committee of three Officers—the Nyaya Mantri, the Accountant-General and the Director of Commerce—is appointed to scrutinize all applications before they are submitted to Government. Seven loans for Rs. 8,75,000 have been sanctioned. In order that the concerns receiving the State loans may not be put to inconvenience for working capital, it is generally held that all these loans may be given through the Bank of Baroda. The Bank gets 1½ per cent. commission for the risk it undertakes, the State depositing the necessary funds with the Bank at 3½ per cent. It is gratifying to note that since the new policy has been inaugurated no money has been lost and all the industries helped are flourishing.

421. This arrangement, we propose, should be continued for a few years more till the volume of the business gets large and an Industrial Bank is possible to be worked profitably. At present, the volume of business is very small and can well be managed by the Bank so long as the State is willing to advance the necessary funds. It is difficult to start new Banks—specially Industrial Banks, whose principles of working are not thoroughly understood in India. In the meanwhile, we would suggest that the Bank of Baroda, should make provision for long term loans for industries by taking title deeds as collateral securities. The State may lend, if the industries are required to be special assisted with loans, at a low rate of interest. If this is found impracticable, the State may consider the idea of organising a subsidised Industrial Bank.

It will be seen from the above discussion that most of the complaints made by the people are unbusiness-like and could not be considered. However, we firmly believe that the Bank would be more useful to local trade and industry provided it adopts the suggestions made above as well as employs some *Shroffs*, if available, throughout the State who may recommend and guarantee business as is done in Bombay. These *Shroffs* may act as Bank's agents and in initial stages serve the purpose of a branch. In this respect we would draw the attention of the Government to the organisation and working of the Bank of Mysore, Ltd. This Bank was started in 1913. It has 6 branches and agencies and owns 3 warehouses. More than 50 per cent. of its funds are employed within the State and it has helped the State in popularising its securities. The Bank of Baroda can do all that and more, provided the Bank makes some special efforts to develop business within the State.

If all these efforts prove unavailable, if all the persuasion fails—which we do not expect would fail—then the State may have to pass a Banking Act as in America and Canada and assist local people to start banks under strict Government supervision.

422. We have hardly any men in the State who are trained in the modern system of banking. If such men are available the object of starting new banks in the Districts would be fulfilled. Therefore, we propose that the State should select two apprentices—preferably graduates in Commerce—and attach them to the Bank of Baroda, Ltd. We have no doubt that the Bank of Baroda, Ltd., would give all reasonable facilities.

Two graduates in Commerce should be trained in banking by the Bank of Baroda, Ltd.

II. Co-ordination of Finance.

423. In 1900, the Baroda State abolished its own currency—except the small copper coins—and adopted the British currency; it has, therefore, no currency problem of its own, and hence, the question of the co-relation of banking and currency does not arise. But the co-ordination of the banking of the State funds and the banking system as well as the organisation of the financial resources of the State as a whole, remains to be considered.

Co-ordination of the State funds and banking.

424. As may be seen from the discussion in the preceding paragraphs there are three kinds of Banks in the State—the Co-operative, the Agricultural and the Commercial. The first two are working with the same object, the financing of Co-operative Societies. But all the Central Banks, Unions and the Agricultural Banks are working independently of each other though the tendency has been observed of the Baroda Central Co-operative Bank, Ltd., acting as a Provincial Bank for the whole movement. All the surplus funds of the different Banks are invested in it. But it is not in a position to rediscount the pro-notes of the other Banks in case of necessity. The Bank itself is a very small one, its share and working capital are very limited; and its field of operation is confined to the Baroda District. It is, therefore, not fitted to serve as a Provincial or Apex Bank for the co-operative movement—a Bank that would be in touch with the outside money market and would serve as a balancing Institution for the whole movement. In a previous section of this Report we have suggested that an Agricultural Bank should be started. This Bank should serve as a Provincial Bank for the agricultural finance but it must take time before a Bank of the status suggested can be started. In the meanwhile, as proposed, the Bank of Baroda, Ltd. should be utilized for the purpose. It is well-managed and it has large funds. It has a good credit. Therefore, it should be utilized as an Apex Bank for the movement. It has already agreed to make a loan to the Baroda Central Bank, Ltd., of Rs. 60,000 against the security of the notes of the primary societies. It has given several other facilities from the head-office as well as from the branches to the Co-operative Banks in the same towns. But we feel that the time has come when some business-like arrangement may be made by which the Banks may be assured of help in times

The Bank of Baroda may be utilized to finance the Co-operative Societies, when necessary.

of financial trouble so that they may expand their business without any diffidence but with the necessary safeguards.

425. In order to settle the terms and conditions of business a Conference of the Banks may be called at which the financial position of each Bank and the whole movement may be discussed, and a general policy may be laid down. In the determination of this policy, the assistance of the State will be necessary. At present, at the suggestion of the Registrar of Co-operative Societies the State has been granting cash credit from the Taluka Treasuries to the Banks and to the Union and has been placing deposits when funds are needed. While co-ordinating the banking of the State it will be necessary to determine how far the existing system of State help should be continued, modified or extended. The State funds should, as far as possible, be utilized for the development of local trade, industries, and agriculture; these funds should be loaned as far as possible through the respective Banks. Under what conditions and with what safeguards these should be invested, should be carefully worked out. We, therefore, suggest that the Accountant-General should be called, at the Conference and he should represent the State. As the movement is progressive, such a Conference should be held every year and the arrangement once made may be revised in the light of experience gained.

The Bank of Baroda, Ltd., may be persuaded to grant loans to the Co-operative Societies at low rates.

426. We do not wish to anticipate the discussion and the arrangements that may be made, but there are one or two points on which we want to make specific recommendations. The Bank of Baroda, Ltd., would not be able to help the Banks and the Unions at less than 6 per cent. interest. Now, this is a very high rate for the Banks to pay as one Union lends money at $6\frac{1}{2}$ per cent. At present, the State funds are deposited with the Banks at $4\frac{1}{2}$ per cent. This privilege of the Banks should not be curtailed. On the contrary, endeavours should be made to persuade the Bank of Baroda to reduce the rate of interest. The Bank of Bombay has granted a cash credit of four lakhs to the Bombay Central Co-operative Bank, Ltd., at 4 per cent. with the special permission of the Government of India. The Bank of Baroda has got several concessions from the State and in view thereof it should be requested to modify its terms and come to the assistance of the movement. Unless the Bank stands behind the other Banks they are likely to be handicapped in their business.

427. As far as possible, the State funds should be invested in the local Banks, of course, with due regard to the safety and the capacity of the various Banks. Credit of each and every Bank and Union may be fixed and funds may be deposited with them as they are deposited with outside Banks. But this policy may be adopted after the co-ordination of the Banks as suggested above.

The State funds should be invested in the local Banks.

428. This question leads us to the organisation of the financial resources of the State and their utilization for its material development. As may be seen from the previous discussion, large sums are required for the development of commerce, industries and agriculture. These sums may be required in two forms, one for the Departmental organisations that should carry out systematic inquiries and suggest improvements and secondly, for the financing of improvements themselves. There is no doubt that there is a very great scope for improvements, and enormous sums are required to finance them. To finance agriculture and redistribution of agricultural land crores of rupees are necessary. For want of well-organised institutions the financial resources are wasted and are not available. We would like to be more explicit. At present, most of the savings of the people and the State are invested outside the State. The Postal Savings Bank has taken away nearly 20 lacs, the State and the *Khangri* funds amounting to a few crores are also invested in outside securities and industries, there being very few local industries. The Bank of Baroda is obliged to lend nearly 80 per cent. (about a crore and a quarter) of its funds in Bombay and elsewhere. When we look to the local needs we cannot remain unmoved by the financial "drain." When we say "drain" we do not for a moment wish to attach any blame to anybody. The existing conditions are such that it is inevitable. Even if all the funds were brought back to-day they would remain idle as they could not be invested immediately, nor can institutions be created all at once. They must take years to grow. What we want to bring to the notice of the Government are the enormous requirements of the people and the availability of funds for the purpose. What we propose is that a strong and active but business-like financial policy should be adopted by which the local funds may be properly utilized for local improvements and if more funds are required outside funds may be brought. It is the business of every Government to conserve its own resources and to bring in more outside capital for local improvements.

429. The organisation of the financial resources can be achieved in several ways; we name a few here below:—

(1) *Savings Banks*: Government Savings Banks may be opened in connection with our Taluka Treasuries. Such Banks have been opened in the Mysore State and they are working very satisfactorily. The success of the Banks would depend upon the efficiency of the Taluka Treasury management. Some years back, this idea was suggested but it had to be given up as the Taluka management was not considered very efficient. There are certain evils that are known to exist, but unfortunately they have not been removed. There is a tendency to condone the faults which should never be tolerated. Efforts must be made to remove them. The people must feel that they can safely deposit their money and withdraw them without any trouble or expense. If the people

once feel confidence in the Treasury management they will certainly be glad to deposit their savings therein. It is the duty of the Government to encourage people to save by providing Savings and other Banks. At present, there is a large amount of funds lying-idle unutilized.

(2) *Life Insurance*: Another way of helping people to save is to start Life Insurance and Provident Companies. State Insurance Companies have been organised in several countries of Europe and in some of the Colonies. In India, too, Postal Insurance of the nature of Provident Funds has been arranged along with the Postal Savings Banks. As a beginning, a State Provident Fund may be opened for the Government servants and then may be left open to the public. Similarly, a Life Insurance Company may be started for the Government servants. The Joint Stock Insurance Companies' charges for premium are rather heavy as they have to spend large sums on advertisement, agencies and office management. The Government may pay the office expenses of the Department and charge such premia as are warranted by the mortality data alone. The Department should manage both the Provident Fund and Life Insurance for the Government servants. To make a beginning, an expert actuary may be engaged to investigate and report and organise an office.

The funds available from these sources may be made available for the development of local trade and agriculture through various Banks.

(3) *Agricultural, Co-operative and Commercial Banks*: The experience of the several kinds of Banks started with Government assistance has been that they are able to tap local sources of deposits and make them available for financing local trade, commerce and agriculture. The number of such Banks is small and they should be increased.

430. The scope for investment will depend, firstly, upon the assistance of Government in the organisation of the Banks, secondly upon the efficiency of the Departments concerned in suggesting improvements in agriculture, co-operation, and industries, and, thirdly, upon the growth of industries. If there are more industries the Bank of Baroda will be glad to invest all its funds locally. If facilities are granted to local and outside capitalists more industries could be started. If the Agriculture Department is able to suggest carefully worked-out improvements more capital may be sunk in agriculture. If the Co-operative Societies are properly organised they can replace the money-lender and stimulate agriculture.

431. There is no lack of funds and there is no lack of opportunities for investment. What is wanted is an active, continuous and systematic Government policy. This is a slow work but a sure one provided the Departments concerned are managed efficiently.

The scope of investment will depend upon Government assistance, etc.

There is no lack of funds and of opportunities.

CHAPTER VII.

Summary of Recommendations.

I. Education.

1. The aim of education should be to train boys for some vocation suited to their condition in life.
2. A change should be effected in the treatment of subjects in the class-room so as to create an interest in them.
3. Subjects of manual training, such as, Drawing, Sloyd, etc., should be introduced as a relief to mental labour. In the rural schools nature study should be introduced in the form of school-gardening, which would serve as a suitable forerunner of scientific agriculture.
4. The curriculum of the secondary schools should give a compulsory course in certain subjects, leaving the others optional for students going in for advanced courses.
5. The present educational system should be divided into two main sections—rural and urban. The three R's, drawing, manual training and nature study should be common to both.
6. In the rural schools rural problems should be given preference. The text books such as arithmetics, etc., should have special references to rural life. School gardening and manual training should be well attended to.
7. The rural teacher should be given such training as would enable him to guide and advise the people on matters social, industrial, and economic. If properly trained up, he is bound to prove a great civilizing agent in general, and of material assistance in advancing measures of village development.
8. In urban schools topics relating to urban life may be introduced. Teachers should have a special course in Municipal life and some one art or handicraft.
9. Teachers as a class should be better paid. It is impossible to expect good work from them on the present meagre scale of salaries.
10. The visual Instruction experiment, tried by the Library Department should be given more funds and encouraged to extend activities.
11. The work of this Branch should not overlap similar work carried on by other Departments, a permanent Committee

should be appointed for the selection of films, training of demonstrators and fixing a programme of demonstration work in co-operation with the Departments concerned. The Committee should consist of the Commissioner of Education, the Curator of State Libraries, the Registrar of Co-operative Societies, the Director of Agriculture, the Director of Commerce and Industries, and the Sanitary Commissioner.

II. Health and Sanitation.

1. The Sanitary Department should be strengthened with more staff and funds for its regular work, as also for organizing exhibitions, demonstrations, and lectures, printing literature calculated to awaken the sanitary conscience of the people, and training up local leaders for this very useful work.
2. Special attention should be paid to domestic hygiene; ignorance should be removed by a well-planned propaganda.
3. More dispensaries should be opened in centrally located villages.
4. A Committee should be appointed to deal with the proposals regarding the extension of village sites in congested areas. The Committee should consist of the Suba, the Executive Engineer, the Sanitary Commissioner, and two leaders from the village concerned. Its decision should be final.
5. The newly appointed Town-planning Officer should build a few model villages.
6. No effort should be spared for medical and sanitary improvement. The "Arogya Rakshaka Niyam" published by the State is a fine book to work upon.

III. Agriculture.

Functions:

1. The main function of the Department should be to work out improvements in the art of agriculture and introduce them in the State. This would comprise of (1) the study of local methods of tillage and crop treatments, including questions of soils, implements and manures with a view to improve them; (2) study of the existing varieties of crops, their improvement, and the introduction of new and profitable varieties; (3) study of fruit culture; (4) inquiry into farm economy, including questions of labour, labour-saving machinery and the final preparation of farm produce; (5) prevention and cure of crop diseases; (6) study of animal husbandry, including questions of veterinary aid and animal breeding.

Staff:

2. To carry on the above inquiries the Department should have a sufficient number of well-trained men. It should consist

of the Director of Agriculture; the Deputy Director, in charge of experimental stations; Extension Officer, in charge of publication branch and stores; Agricultural Engineer, in charge of boring and selection of implements; experts in Economic Botany, Agricultural Chemistry, etc.; and a Veterinary Superintendent, with a number of Veterinary Surgeons, to carry on cattle breeding and Dairy industries.

3. The Director of Agriculture, who should be of proved capacity for his organising and supervising ability, should be free from office routine to be able to move freely in the district, investigate problems, work out schemes, and co-ordinate and supervise the work of all the branches. His Superintendent should have powers to dispose of all office routine.

Government Grants:

4. A non-lapsible grant of 1 lac of rupees should be made to this Department to enable it to meet the recurrent and non-recurrent expenditure of its current and extended activities; compared with its present expenditure of Rs. 55,000, the proposed increase is not high.

Working of the Department's programme:

5. *Experimental Stations.* The Department should be provided with District Agricultural Stations, and with sub-stations at each one of the agricultural tracts of the State, for carrying on experiments warranted by local conditions. The Annual Report of the Department should give complete information of the various experiments undertaken and the results achieved therefrom. As it is, the records are either absent or incomplete.
6. *Agricultural Engineering.* The growth of industries and the development of education on the present literary lines prejudicially affect the supply of agricultural labour and make the use of labour-saving devices imperative. In order that the efforts of the agriculturists in this direction may not be mis-directed, the Mechanical Engineer now attached to the Agricultural Department should guide them to a judicious use of machinery and improved implements. The District boring sets should also be made over to him, and the work done under his direction, since it is not efficiently done by the Local Boards.

The Entomology Department should be discontinued as it has not shown any good results.

7. *Animal husbandry.* As the chief problem is that of fodder, fodder crops should receive serious attention. For improving the breed of cattle, bulls and stallions may be supplied free from cattle farms. Itinerant veterinary surgeons are appointed for the out-lying villages, small medicine chests should be given to intelligent Patels for the treatment of ordinary ailments.

The Dairy industry should be helped by starting Co-operative Societies for the purchase of concentrated food and the sale of the products, as also by giving subsidies for starting creameries and butter factories.

8. *Agricultural Education.* New agricultural schools need not be opened for the present owing to their doubtful utility; but the Extension Branch should organize short courses in agricultural subjects for *bona fide* cultivators at suitable centres. The Extension Branch should also undertake the entire propaganda work of demonstrations, exhibitions, shows, and the publication of popular literature in agricultural subjects.
9. *Subdivision of agricultural land.* The fundamental problem in the agricultural economy of the State is that of consolidation of holdings, as the scattered and minutely subdivided holdings stand in the way of far-reaching improvements, and make the use of labour-saving devices impossible. The recommendations of the Committee of 1917 in this connection have our full support.

Agricultural Finance:

10. Private money lending by the Sowkars has its faults; but as it is impossible, even undesirable, to abolish private money lending altogether, it is recommended that the present Interest Act should be amended so as to include the Jarap (advance) contracts under its operation, and that Section 174 (C) of the Civil Procedure Code should be amended so as to impose an obligation on the Judge to see all past transactions and make the Act applicable to all agriculturists.
11. An Agricultural Banks Act, on the lines recommended by the Department of Commerce, should be passed. A new scheme for a Central Agricultural Bank, with Branches in all important towns and agricultural centres, should be invited, and it should be granted the necessary concessions, since Co-operative Credit Societies, though excellent in themselves, cannot meet the needs of big landholders going in for costly improvements.
12. Tagavi loans being a necessity until Agricultural Banking is sufficiently developed, it is recommended that with a view to inducing agriculturists to go in for costly improvements a sum of Rs. 25 lacs may be set aside for advancing to enterprising cultivators at 3% and that the Taluka agency through which these loans are administered should be cured of rigidity and corruption, or preferably the loans be given through Co-operative Societies wherever possible.
13. The Co-operative Societies have fully convinced us of their efficacy not only as a financing medium for agriculture, but also for other improvements—moral, social, and economic; and we unhesitatingly recommend Government to devote more attention and funds for their development. The aim of

the Department should be to make the movement self-contained both as regards funds and management, and get it extended to all the various functions of agriculture instead of confining its operations only to credit societies. To ensure this end there should be periodical Conferences between this Department and that of Agriculture. The Department should be made permanent, competent men should be attracted to its service, propaganda work should be extensively carried on, and the village officials and the school teachers should be trained in co-operation. As the Co-operative Credit Societies are not in a position to make large and long-time loans for wiping out old debts, the Central Bank at Baroda should be asked to extend its business and issue debentures to be guaranteed by Government.

14. *Record of Land Rights.* As a necessary basis for any efficient system of agricultural banking it is necessary to establish a complete record of titles to land, on the strength of which loans may be made. Steps should, therefore, be taken to introduce the Record of Land Rights, as in the Bombay Presidency, or to introduce a revised card index of documents, with a revised Pass Book, as the next best alternative. The results in Padra and Sankheda should be noted before the measure is introduced on a large scale.
15. *Agricultural Indebtedness.* Besides the general measures of preventing agricultural indebtedness, such as the consolidation of holdings, the introduction of Agricultural Banks and Co-operative Societies, suppression of expensive social customs and the spread of education, we do not propose a restrictive legislation such as Liquidation of debts by Government, nor a legislation on the lines of the Deccan Agriculturist Relief Act or the Punjab Land Alienation Act owing to their doubtful utility.

Some remissions of outstanding arrears should be made where necessary, as in Amereli; and efforts should be made to liquidate old debts through Co-operative Societies, and for this purpose their number should be increased and their working improved.

Rural Problems:

16. *Social and Economic Surveys.* With a view to ascertaining what the rural problems are, the Statistical Department should be asked to undertake comprehensive Sociological Surveys of typical villages in different parts of the State; collect accurate agricultural statistics; make a critical study of the economic condition of the people, in relation to the various world forces operating; make a careful study of the effects of the social and economic legislation; and finally to publish monographs on all these questions for the information of the public.

17. *Training of Local Leaders.* As the rural problems are by their very nature very difficult and complicated, and as their solution must rest ultimately with local leaders, it is proposed that a series of lectures in subjects like Local Self-Government, Co-operation, principles of Agriculture, Home Hygiene, Sanitation, Village Libraries, Social Legislation, etc., may be organized at the District Head-quarters for about half a dozen of prominent and practical agriculturists from each Taluka, the Government defraying their expenses. Social service organizations may also be asked to co-operate with Government in this work.
18. *Social Customs.* Harmful social customs, such as expensive caste dinners, quite beyond the scanty means of the host, should be stopped.
19. *Rural life and woman.* Lady teachers should be engaged to teach the village girls something useful in their after-life. The Dairy industry is entirely a woman industry, and she may be shown better methods in that line. Woman is a great economic factor in the life of the agriculturists, and money spent on her enlightenment would be amply repaid in the general improvement of the people.
20. *Drink.* Efforts should be made in co-operation with our neighbours—and we have not a few owing to the broken nature of our territories, making internal legislation in this matter more or less futile—to abolish drink traffic entirely, or, at least, to reduce it considerably. The moral and material improvement of the people thus secured would more than compensate for the loss in revenue.
21. *Organization of rural life.* The Department of Local Boards should be remodelled so as to include all the activities of village life, in co-operation with the different Departments of the State, and provide for joys and pleasures—pleasures that would remove the dullness of life and ultimately increase the industrial efficiency of the people.

Miscellaneous topics:

22. *Land Revenue and its collection.* The Subas may be authorized to change the date for the payment of revenue in sympathy with the nature of the agricultural season.

Huge arrears of land revenue should not be allowed to accumulate, since they are known to have very demoralising effects on the agriculturists; they should be collected within a few years, if possible, or written off.
23. *Irrigation.* The possibility of bunding the Gujarat rivers should be investigated and the well-irrigation should further be extended by giving long-term Tagavi loans for wells, oil-engines and pumps. A sum of rupees ten lacs may be set aside for this purpose. Trial wells should also be sunk by Government to determine the quality and quantity of water

- in special areas. No interest should be charged on Tagavi given for boring wells.
24. *Famine.* With a view to minimising the effects of famine, cultivators may be induced to grow food-crops, like bajri and jowar, that would give them an increased amount of food for themselves and fodder for their cattle. The Agricultural Department should demonstrate the cultivation of special fodder crops; and arrangements should be made to store the fodder from the State forests in pressed bales.
 25. *Gowchars.* Gowchar lands should not be allowed to be reduced to less than 5 per cent. of the village area, and they should be kept in proper condition.
 26. *Roads.* Now that the railway programme is nearly over, more funds should be devoted to the construction of good roads, which are very essential for purposes of agriculture and commerce. A definite sum should be set aside for this purpose in the Public Works Department budget, and the co-operation of Local Boards and villagers should also be sought.
 27. *Tenancy Legislation.* We do not think that under the Raiyati-wari tenure Tenancy Legislation is needed. The reconstruction of holdings on an economic basis would greatly minimise the existing evils.
 28. *Markets.* Markets should be organized at Taluka towns under the supervision of a Committee of local merchants, who may also publish the current rates so as to ensure reasonable prices to the cultivators for their crops.
 29. *Cottage Industries.* Cottage industries, such as hand-loom weaving, hosiery, silk-rearing, dairy farming, cattle-breeding, etc., should be started in places where they do not exist, so as to remove the monotony of agricultural operations, and give the agriculturist an opportunity to add to his small income by utilising his spare time. Demonstrators should be sent round, Tagavi loans advanced, and sales depots opened at suitable centres.
 30. *Village Telephone.* The Talukas of this State are not developed enough to warrant a telephone system connecting important villages with the Taluka head-quarters; but as an experiment one Taluka may be tried.

IV. Forests.

1. Under the concerted action of the Departments of Forests, and Commerce and Industries, a definite programme should be laid down with the object of sending out forest products in the best possible manufactured state.
2. A Forest Research Laboratory should be opened for analysing all important forest products.

3. Along with the proposed Industrial Museum a Forest Museum should be opened, where information as to the origin, quality and quantity of the articles stocked can be given to interested industrialists.
4. Propagation of certain valuable species of trees, such as the Mowras, should be zealously carried on.
5. A Forest Railway Line between Kala-Amba and Zankhvav should be constructed for the easy handling of forest products; also the feeder lines which may be necessary as industries grow.
6. A Forest Developmental Officer should be appointed for the proper exploitation of our forests which are a great asset to the State.
7. Without any prejudice against extension of agriculture, the Committee considers it a suicidal policy to allow encroachments on the forest areas for the promotion of agriculture and would, therefore, urge upon Government not to liberate any large areas for agricultural extension.
8. All large tracts of waste land wherever available should be utilized for creating reserved forests; and the roadsides and the railway sides should be used for planting useful trees, since even in the best interests of agriculture it is advisable to create forest areas in so far as they effectively attract rains, besides giving ample fuel for local consumption, where in its absence a valuable manure in the form of cow-dung is burnt. The idea of creating reserved forests and village wood-lands should, therefore, be seriously taken up. Even the village *kharabas* should be utilized by Government for planting trees on its own initiation.

V. Industries.

1. The number of members on the Industrial Advisory Committee should be strengthened by allowing all important Municipalities to send one representative each to the Committee.
2. Export duties should not be charged on articles manufactured in the State. The proposed export duty on Alembic liquor is unsound, and should not operate.
3. Being subject to the same economic system as holds in British India, we, in co-operation with other Native States, should persuade the British Indian Government to adopt such a Tariff Policy as would develop the resources of India to the best advantage of her people.
4. Our spirit industry should be treated on equal footing in British India, and should enjoy the same privileges as are enjoyed by foreign manufacturers within our territories.
5. A Ceramic expert should be appointed to study the resources for that industry and guide the existing and future manu-

facture in that line, for which there are very good chances in the State.

6. The possibilities of the Glass and Alkali industries within the State should be thoroughly investigated into, and no efforts should be spared to develop them if they are found to be commercially possible.
7. A fully organized Soap Department should be started in the Kala Bhuvan, and students should be trained up for the manufacture of soap, glycerine, and candles, especially the former, for which there is a great demand in the country and a wild field as a subsidiary industry with the oil mills.
8. The possibilities of manufacturing cigars and cigarettes from Petlad tobacco should be investigated into.
9. The expert chemist now sanctioned for studying and improving the tanning methods of the *Chammars* should be asked to inquire into the possibility of starting a large scale leather tanning industry on modern lines within the State.
10. Careful attention should be given to the development of the forest resources of the State.
11. The possibilities of starting industries such as hosiery, calico-printing, saddlery and shoe-making, manufacture of tin and hollow-ware should be investigated.
12. A well-equipped Chemical Laboratory should be attached to the Department of Commerce and Industries, since the work of testing raw materials cannot be done by the Kala-Bhavan or the College laboratories without prejudicing their legitimate functions. In case, Government does not feel inclined to spend a large sum over this scheme, it is recommended, only as the next best alternative, that the College Laboratory be improved with the necessary equipment for this work. The Applied Chemistry Department should thus be immediately got ready and made available to the Department of Industries for investigation purposes.
13. A Mechanical Engineer should be attached to the Department of Industries for organizing peripatetic parties, and for training the artisans in improved methods and the choice of proper tools and implements.
14. The Kala-Bhavan should be asked to give all facilities to the Department of Industries for its experiments.
15. Capitalists should be encouraged, by means of special concessions, to take up industries that are proved to be economically possible; and in case private capital is not forthcoming, Government should not hesitate to pioneer industries.
16. The administration of the Factory Act should be entrusted to the Director of Industries.
17. Though Cottage Industries stand a poor chance of competing with modern machinery, they have certain advantages for the country population, and demonstrators should, therefore,

be sent round to illustrate the benefits of using improved tools and implements. Schools should also be opened for different handicrafts, and hand-loom weaving, tanning, shoe-making, etc., should be encouraged.

18. Efforts should be made to introduce Co-operative Societies not only for credit but for purchase and sale, which would improve the business-side of the handicrafts very materially.
19. Special schools for the sons of artisans should be started, under the supervision of a competent Inspector, and the courses should include manual training as well as primary education. A Branch for the development of handicrafts should therefore be organized under the Department of Industries.
20. That we may not repeat the mistake of Western Industrialism and thus avoid the creation of slums with all their demoralising effects upon labour, we propose that a survey be made of industrial towns, and the industrial suburbs be prohibited from being put to any other use; that the administration of the rules for factory sites should be entrusted to the Department of Industries, which should get a competent engineer to prepare plans for industrial sites; that the applications for factory sites should be forwarded by the Vahiwatdars to the Director of Industries, who should decide them; that industries using coal and employing more than 100 men should be located outside the town; and that permission to build factories should be given only after being satisfied that proper provision has been made for housing the labourers where it is necessary.
21. An Industrial section should be organized in connection with the Baroda Museum, and it should have four sections, viz., Agriculture, Forestry, Industrial Arts of Baroda, and Industries, the last section giving the natural resources, their industrial uses, as also information as to their manufacture; similar Museums on a small scale should be organized at all District Headquarters; a fully equipped Technical Library and a Sales Depot of Baroda Arts and Industries should also be attached; and periodic Industrial Exhibitions should be held at District towns.
22. As regards Technical Education, the Kala-Bhavan, the centre of such education, should be provided with better-paid and better-qualified staff, the Applied Chemistry Department should be developed, and a high standard of efficiency should be maintained. It should afford facility for making experiments, instead of catering to outside orders and thus commercialising the institution to an extent that affects the efficiency in teaching and the scope for experiments. Arrangements for a healthy co-operation between the Bhuvan and the Department of Industries should be made through the Education Department for such purposes as giving practical training

to the students in the existing factories, or else the Institute may be placed under the Department of Industries.

23. The Public Works Department may be asked to inspect the river ports of Billimora and Naosari, which are reported to have been rendered shallow by the accumulation of silt, and make practical suggestions for their improvement. The commercially important sea-ports of Velan and Beyt should also be developed.

VI. Financial Facilities.

1. Branch-banking should be developed, and the Branches should devote more attention to lending money by discounting commercial paper than to the mere accumulation of deposits. This would furnish an amount of fluid capital for local trade and industries, and Government should therefore help these bodies in their initial stages, if necessary. The Bank of Baroda may also be induced to open ware-houses at important trade centres, since in their absence the trade becomes spasmodic, as raw materials have got to be shipped as soon as they come to the market.
2. Since a commercial bank, like the Bank of Baroda, cannot, by its very nature, make long-term loans for industries, the State should continue the policy of giving industrial loans through the Bank of Baroda till the volume of business gets developed enough to make an Industrial Bank, which is a real solution of the difficulty, economically possible. The Baroda Bank may also be induced to lend more freely to local trade and industry on the guarantee of shroffs, as in Bombay, wherever possible.
3. It should be arranged that till an Agricultural Bank comes to be started in the State, the Bank of Baroda may act as an Apex Bank for the Co-operative Societies.
4. Annual Conferences (of all the important financing institutions) should be held to consider the conditions and the safeguards under which the State aid to local industries and agriculture should be made through these bodies; the Accountant General should represent the State in these Conferences.
5. In consideration of the concessions held by the Bank of Baroda from the State, the Bank may be asked to make loans at a low rate to the Central Co-operative Banks for lending to Co-operative Societies, as is done by the Bank of Bombay.
6. The State may attach two Graduates in Commerce to the Baroda Bank for being trained.
7. State funds should be invested with local banks as far as may be consistent with their credit.
8. In order to make the financial resources of the State available for local improvements, instead of allowing them to be

drained outside the State, strong business-like efforts should be made to tap local resources by means of Government Savings Banks at Taluka Treasuries, like those in Mysore Government Life Insurance and Provident Companies and Agricultural, Co-operative, and Commercial Banks.

(Sd.) SAMPATRAO GAIKWAR.
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APPENDIX I.

Committee on the Economic Development of the Baroda State.

List of questions to be answered by witnesses.

A. *Preliminary:*

1. Name.
2. Residence.
3. Occupation.
4. State: Special experience of any trade or industry that you may possess.

B. *Commerce:*

5. What are the existing facilities for financing trade and industries in your town or village?
Are these facilities adequate?
Do you suggest any improvements, and if so, what?
6. Do you suggest any extension of the Railway facilities of your District? What new lines would you suggest? Would there be sufficient traffic to make them remunerative?
7. Is your District well provided with pacca roads? If not, what roads you suggest should be constructed for trade purposes?
8. Does your District require any ware-housing facilities? If so, where: How should these be provided for?

C. *Industries:*

9. Do you know of any industry in your District which requires special help from the State, and if so, in what shape?
10. Do you know of any new industry that is possible to be introduced or old one to be developed in your District? Please give details.
11. How are the existing industries—small and large—in your town or village or Taluka, financed? Does the existing system require any improvement? If so, what?

12. Would a system of Government bounties and prizes help to revive the decaying handicraft industries? If so, which industries? What bounties should be offered?
13. How far, do you think, can the State take a direct part in the promotion of industries?
14. Have you got any other suggestions to make for the development of industries in the State?

Agriculture:

15. Does Agriculture in your village or Taluka require any special action for development? If so, what lines would you suggest?
16. Are there sufficient irrigational facilities in your village or Taluka? If not, what action would you suggest?
17. Is sufficient grazing land available in your village? If not, what are your requirements?
18. What has been the effect of the breaking up of the big lands in your surroundings?
19. What, in your opinion, should be done to encourage intensive cultivation in your village and your Taluka?
20. What action would you suggest in the following lines:—
 - (a) Supply of improved seeds.
 - (b) Supply of improved implements and machinery.
 - (c) Improvement in the breed of plough cattle, horses, sheep, etc.
 - (d) Introduction of new and profitable crops.
 - (e) Consolidation of holdings.
 - (f) Extension of irrigation facilities.
 - (g) Disposal of farm products.
 - (h) Improvement of the Dairy Industry.
 - (i) Introduction of Cottage Industries to help the cultivators and agricultural labour.
21. Do you suggest any legislation for the regulation of tenancy contracts?
22. What are the existing methods of financing agriculture? Are these adequate? If not, what special steps would you suggest?
23. Do you suggest any change in the present method of advancing Tagavi loans in the State?
24. Have you any experience of the Co-operative Societies? If so, what?
25. What special methods would you suggest for the development of the co-operative movement in the State?

26. Have you any experience of the working of the Agricultural Banks in the State?
27. What suggestions would you make for the improvement of their constitution and the method of their business?
28. What special methods would you propose for the liquidation of old debts of cultivators?
29. Do you suggest any measures for the suppression of usury in the State?
30. Do you approve of the system of Record of Land Rights being introduced in the State?

E. *Forest:*

31. Do you know of any Forest Industries that are likely to be developed?
32. Have you any suggestions for replanting of our forests?
33. Is the present method of cutting the forest economical? Have you any improvements to suggest?

F. *Technical Education:*

34. Are the existing facilities for imparting commercial and industrial education adequate? Do you suggest any further extension? If so, in what lines?
35. What types of schools would you suggest for imparting agricultural instructions in the State?

G. *Miscellaneous:*

36. Do you know of any laws and regulations which, in your opinion, come in the way of the economic development of the State?
37. Do you know of any taxes which adversely affect trade, commerce and industry of the State?
38. Have you any suggestions to make regarding the holding of periodic economic surveys or inquiries in the State?
39. Have you any suggestions to make regarding the departmental organisation for the economic development of the State?
40. In what way co-operation of the people with the State can be secured for the economic development of the State?
41. Have you any special suggestions to make regarding the economic development of the State in general?

APPENDIX II.

Classification of specific suggestions * as stated in para. 5 of the Report.

- (1) Those that the Committee considers effect should be given to.

Serial No.	Suggestion.	Remarks.
1	2	3
	<p><i>B. Commerce.</i></p> <p style="text-align: center;"><i>Question No. 5.</i></p> <p>1 There are no arrangements to help the industries and consequently money is borrowed from the money-lenders at a high rate of interest. The remedy suggested is in the form of giving Tagavi to the industries on the basis of Tagavi given to Agriculture or to open Industrial Banks.</p> <p>2 A branch of the Bank of Baroda should be opened at Amreli.</p> <p style="text-align: center;"><i>Question No. 7.</i></p> <p>3 Metal roads from the railway station of the Taluka town to every village containing 2,000 inhabitants should be constructed in every Taluka of the State.</p> <p>4 Pacca trunk roads are not necessary in the Baroda District as there is a railway at every principal town. The existing roads may be repaired. Roads from 50 to 60 feet wide may be constructed from one village to another, with causeways if the rivers and streams intervene. Drainage on a large scale would remove the surplus water and lead</p>	

* These suggestions are given almost as made by witnesses. They will require modification when put into practical shape. This the committee has not undertaken.

APPENDIX II—*contd.*

Serial No.	Suggestion	Remarks.
1	2	3
	<p>to the well-being of the people. <i>Pacca</i> roads would, on the contrary, entail large expenditure. In the rainy season, the inhabitants of each village should repair the roads as far as the village boundary. The projects whose utility is doubtful should not be undertaken; but the projects which are essentially necessary should be undertaken.</p> <p style="text-align: center;"><i>Question No. 8.</i></p> <p>5 The warehousing facilities should be provided in every Taluka town, centrally located, and at the same time well-supplied with modern transportation facilities.</p> <p>The warehouses should be built for the following things:—</p> <p>(a) Pure seeds and agricultural implements,</p> <p>(b) Food-stuffs, etc., and</p> <p>(c) Dry goods.</p> <p>7 The building of warehouses should be encouraged by</p> <p>(a) providing sites outside the Municipal octroi limits; no octroi duties being charged on goods exported or meant for surrounding villages;</p> <p>(b) means of Joint Stock Companies;</p> <p>(c) building warehouses at State cost and renting them to merchants at moderate rates and also by lending money directly or through a Bank on the goods stored; and</p> <p>(d) Co-operative Societies—especially for seeds and agricultural implements.</p>	

APPENDIX II—contd.

Serial No.	Suggestion.	Remarks.
1	2	3
8	<p><i>C. Industries.</i></p> <p><i>Question No. 9.</i></p> <p>Industries should be helped by</p> <p>(a) Government loans at moderate rates directly or through a Bank or a Co-operative Society—the last especially for weavers;</p> <p>(b) giving land free of charge or providing easy and prompt procedure to acquire land for industrial purposes;</p> <p>(c) providing industrial experts for the industries in the State;</p> <p>(d) providing vocational education and demonstrations in the uses of labour-saving machines to artisans and their children;</p> <p>(e) the abolition of octroi duties on raw materials for industries</p> <p>(f) holding annual exhibitions and rewarding superior manufacturers; and</p> <p>(g) the construction of model factories.</p>	
9	<p><i>Question No. 10.</i></p> <p>The following industries may be developed :—</p> <p>(a) Glassware, pottery, tanning, spinning, weaving, alkali industries, bone-crushing and Oil Mills in the Kadi District;</p> <p>(b) Rice Mills and Cigarette factories in the Baroda District;</p> <p>(c) Soap, candle and button factories and sugar industry in Naosari, Dhari and Khambha;</p>	

APPENDIX II—contd.

Serial No.	Suggestion.	Remarks.
1	2	3
	<p>(d) Dairy industry in Kodinar and the development of water-power in Amreli; and</p> <p>(e) Hand-loom weaving in every District.</p> <p style="text-align: center;"><i>Question No. 11.</i></p> <p>They may be developed by</p> <p>(a) putting a heavy duty on the export of raw materials that are not used in local industries;</p> <p>(b) providing scholarships to study abroad;</p> <p>(c) pioneering model factories;</p> <p>(d) developing available harbours;</p> <p>(e) providing for industrial research;</p> <p>(f) providing industrial, commercial and technical education on modern lines;</p> <p>(g) introducing small labour-saving devices; and</p> <p>(h) the provision of Government loans at moderate rates.</p> <p style="text-align: center;"><i>Question No. 12.</i></p>	
10	<p>A system of Government bounties and prizes would revive the decaying handicraft industries provided they are given at annual or triennial Industrial Exhibitions of Baroda products.</p>	
11	<p>The handicrafts may be developed by compelling Government Offices to buy articles locally made.</p>	

APPENDIX II—*contd.*

Serial No.	Suggestion.	Remarks.
1	2	3
12	<p style="text-align: center;"><i>Question No. 13.</i></p> <p>To promote new industries the State should</p> <ul style="list-style-type: none"> (a) provide industrial, commercial and technical education on modern lines; (b) appoint an Industrial Advisory Board consisting of experts and business-leaders to advise on industrial matters; (c) conduct a thorough industrial survey and provide for a Central Laboratory for research; (d) provide an Industrial Museum at Baroda and District Museum with a Bureau for sale of articles and also a stall at every Railway Station; (e) provide land for industrial purposes on easy terms and railway facilities to big enterprises; (f) abolish octroi duties throughout the Raj wherever possible, when it is found that they hamper industries; (g) pioneer industries, start model factories and after successful operation to sell them; and also (h) provide money on easy terms. <p style="text-align: center;"><i>Question No. 14.</i></p>	
13	<p>Good Technical Schools should be opened and technical books should be prepared in Vernaculars.</p>	

APPENDIX II—*contd.*

1	Suggestion.	Remarks.
	2	3
	<i>D. Agriculture.</i>	
	<i>Question No. 15.</i>	
14	A model farm should be established in each Taluka for demonstration purposes and a cattle-breeding farm should be attached to it.	
15	The farmers may be allowed to build houses on their farms for which no special rates should be levied.	
	<i>Question No. 17.</i>	
16	The grazing land throughout the State, except in certain Talukas of the Amreli District, <i>viz.</i> , Kodinar and Dhari, is inadequate and this deficiency should be made up wherever possible.	
	<i>Question No. 20.</i>	
17	Seed-farms should be opened. Seed-stories should be opened at every Taluka Head-Quarters. The seeds collected must be tried by the Agriculture Department before distribution.	
18	The improved implements should be distributed to the people at concession rates, the loss being made up by the Government and the Panchayats.	
19	To introduce improved implements, the size of fields should be increased over what it is now.	
20	Breeding farms should be opened and bulls should be distributed to villages.	
21	Export of cattle should be heavily taxed.	

APPENDIX II—*contd.*

Serial No.	Suggestion.	Remarks.
1	2	3
22	<p>The Special Committee's proposals about the consolidation of small holdings may be brought into force by the following ways among others:—</p> <p>(a) Revenue Officer should explain advantages of this system to the cultivators.</p> <p>(b) The Khatedars may be assisted to consolidate holdings by exchange.</p> <p>(c) The present survey numbers should not be allowed to be sub-divided beyond certain limits.</p> <p>(d) A Revenue Officer doing this work successfully should be rewarded.</p> <p>(e) Exemption from stamp or Registration charges for re-stripping or exchanges.</p>	
23	<p>Markets should be opened at convenient places.</p>	
24	<p>The Commerce Department should publish intelligence as to where a particular article has the best market.</p>	
25	<p>The Government should employ a dairy expert and he must, along with other work, advise people in the preparation of casein etc.</p>	
26	<p><i>Question No. 22.</i></p> <p>The agricultural operations are at present financed by the <i>Sowkars</i> and the big land-holders. This method of agricultural finance being costly and ruinous to cultivators should be done away with, as soon as possible.</p>	

APPENDIX II—*contd.*

Serial No.	Suggestion.	Remarks.
1	2	3
27	<p>The method of giving Tagavi to finance agriculture should be modified—it should be given at nominal interest and through the Co-operative Societies.</p>	
28	<p>A big Agricultural Bank with branches in each Taluka should be started to work especially in the backward areas.</p>	
<i>Question No. 25.</i>		
29	<p>The Government should advance money to the Co-operative Societies at a low rate of interest, <i>i.e.</i> at 3 or 4 per cent. This will lead to the increase of members and societies. The debts of the agriculturists should be settled through the Vishishta Panchayats or respectable persons. This will remove mistrust and agriculturists will take more active part in the societies than they do at present.</p>	
30	<p>The Co-operative Societies may be encouraged in the following ways:—</p> <ol style="list-style-type: none"> (1) Societies may be allowed to be formed according to castes. (2) Experienced men should be engaged who can work with the people. (3) Financing agencies should be started with funds enough to help the societies. (4) Money should be supplied to the societies without delay. (5) Societies lend money for agricultural purposes. Money may also be lent for non-agricultural purposes on the security of property, value of which is double of the money to be advanced. 	

APPENDIX II—*contd.*

Serial No.	Suggestion.	Remarks.
1	2	3
31	No haste should be made in multiplying the societies. One or two model societies should be created to serve as an example to the people.	
32	The Credit Societies should also work to other ends after the development of their credit business.	
	<i>Question No. 26.</i>	
33	The Agricultural Banks are useful in releasing the Khatedars from the clutches of the Sowkars. The interest is low. Such Banks should be opened in every Taluka.	
34	The Agricultural Banks of the State are mostly engaged in mortgage transactions. Sometimes, money remains idle in the Banks or it is deposited in other Banks at a low rate of interest. Thus intended benefits are not received by the people. Some changes should, therefore, be made in the methods at present followed.	
	<i>Question No. 27.</i>	
35	The Government should not encourage the Agricultural Banks by keeping them under its control.	
36	They should be conducted by private enterprize as far as possible.	
37	The Agricultural Bank should be worked on the lines followed by the Co-operative Banks.	
38	A Committee consisting of respectable persons should have powers to supervise the work of the Bank.	

APPENDIX II—*contd.*

Serial No.	Suggestion.	Remarks.
1	2	3
	<p>The principal Officers of the Bank should not be of the grade less than that of an Aval Karkun or a Vahiwatdar.</p>	
39	<p style="text-align: center;"><i>Question No. 30.</i></p> <p>The Record of Land Rights and Encumbrances should be slowly introduced. The Government would thereby know the debts incurred by the cultivators and take measures to free them from the debts.</p>	
40	<p><i>E. Technical Education.</i></p> <p style="text-align: center;"><i>Question No. 34.</i></p> <p>The scope for technical study may be widened in the following ways:—</p> <p>(a) Technical Schools should be opened and the knowledge of</p> <p>(i) Exports and imports,</p> <p>(2) History, Geography and Mathematics, and</p> <p>(3) Science through Vernacular books—specially prepared for the purpose—may be imparted.</p> <p>(b) The scope of the Kala-Bhavan should be enlarged and should be converted into a large Polytechnic Institute.</p> <p>(c) A Laboratory on a large scale should be maintained in</p>	

APPENDIX II—*contd.*

Serial No.	Suggestion.	Remarks.
1	2	3
	<p>the Kala-Bhavan and various experiments made.</p> <p>(d) Industrial workshop should be opened and model machinery kept therein.</p> <p>(e) Post graduate study may be introduced for the Science Graduates.</p> <p>(f) The Science Professors should be entrusted with the research work.</p> <p>(g) More schools of Arts and Industries should be opened.</p> <p>41 Intelligent students should be sent abroad to prosecute their studies and on their return arrangements may be made to start new industries.</p> <p style="text-align: center;"><i>Question No. 35.</i></p> <p>42 Agricultural Schools should be opened in some of the Talukas and they should be managed by the Department of Education. Every son of a farmer after receiving the ordinary elementary education should be compelled to join it.</p> <p>43 Every District should have a model farm of its own where the cultivators might be given demonstrations in up-to-date implements and technique of agriculture.</p>	

APPENDIX II—*contd.*

Serial No.	Suggestion.	Remarks.
1	2	3
44	Text-books containing lessons in agriculture should be introduced in the schools.	
45	The best farmers should be sent abroad for further study at the State expense.	
	<i>F. Miscellaneous.</i>	
	<i>Question No. 36.</i>	
46	The Laws should be so amended that the people may be freed from the trouble of asking permission when they want to make slight repairs to their houses. It may be required while building new houses.	
47	<p>There should be no octroi duties at all; and if they be continued</p> <p>(1) they should be levied on railway receipt;</p> <p>(2) no duties should be taken from the Railway passengers and the importer of goods by carts;</p> <p>(3) the scales of duties on different articles should not differ, but it may vary according to the price of the article.</p> <p style="text-align: center;"><i>Question No. 41.</i></p>	
48	Industrial Arts should be taught to disabled persons.	

APPENDIX II—*contd.*

- (2). Those that the Departments should make further inquiries and Report to Government for orders.

Serial No.	Suggestion.	Remarks.
1	2	3
	(A). <i>Those referred to the Central Government.</i>	
1	The Huzur, Council and Dewan Orders should be collected and printed every year.	
	(B). <i>Those referred to the Revenue Department.</i>	
2	The Income-tax Act should be amended permitting the exemption of the depreciation charges from the levy under the Act.	
3	Careful annual survey should be made of the <i>Gauchar</i> and cattle of each village.	
4	The grazing area should be let out at concession rates to breeders.	
5	No more lands should be given out for cultivation. All the waste and uncultivated lands should be used for cattle breeding purposes only.	
6	The time as to when revenue should be collected may be left to the discretion of the Suba, who will pass or obtain orders according to the needs of the locality.	
7	The tax levied on the edible fruit-bearing trees should be discontinued.	
8	When a farmer sinks a well at his own expense the assessment should not be increased.	
9	Houses should be allowed to be built in the fields.	
10	The necessity of obtaining permission to build new houses on the same site in place of the old ones should be removed.	
11	The land revenue should be fixed after determining.	
	(a) what the income of a farmer is per bigha; and	
	(b) what his expenses are including land assessment per bigha and what his net income.	

APPENDIX II—*contd.*

Serial No.	Suggestion.	Remarks.
1	2	3
12	The scale of customs duties should not be heavier in Kodinar than any other Taluka	
13	The land assessment, where found higher than in the British India, should be decreased.	
14	The Patels should be elected by the inhabitants of the village.	
15	The scale of pay of the Patels should be increased owing to the increase of work.	
17	Sixty years' settlement should be introduced or tried.	
<i>(C). Those referred to the Development of Commerce and Industry.</i>		
18	The Bank of Baroda, Ltd., should be made to lend to the merchants on good security through its Mehsana Branch.	
19	The Bank of Baroda accepts deposits; but does not lend money. Any scheme, whereby money can be lent on personal security and <i>Hundis</i> can be freely used, should be set on foot. The Bank should advance money locally on a larger scale than at present.	
20	<p>The following industries should be encouraged:—</p> <ul style="list-style-type: none"> (a) furniture works; (b) dye manufactures; (c) tanning; (d) metal work of all descriptions; (e) manufacture of weaving thread, camphor, potash and paper pulp. (f) manufacture of card-board from paddy stalks; (g) jute manufacture; (h) oil mills, flour mills, and soap industry; and (i) ship-building industry in Okha. 	

APPENDIX II—*contd.*

Serial No.	Suggestion.	Remarks.
1	2	3
21	<p>The following handicraft industries should be developed:—</p> <p>(a) hand-loom weaving and spinning ;</p> <p>(b) wood-work, toys, etc., in Visnagar ;</p> <p>(c) printing cloth, pottery, cutlery and silk cloth in Pattan ;</p> <p>(d) sandal wood work in Billimora ;</p> <p>(e) steel locks at Sojitra ;</p> <p>(f) laquer ware at Sankheda ; and</p> <p>(g) tanning in Kadi ;</p> <p>and they may be developed in the following ways:—</p> <p>(a) by giving improved machines ; and</p> <p>(b) by giving loans or grants to enterprizing workers.</p>	
22	A Cigar Factory should be started.	
23	Improved machinery for home industries should be introduced.	
24	<p>The inquiries like the present should be made every 3 or 5 years through a Commission ; and the reports, containing information about—</p> <p>(a) new industries started ;</p> <p>(b) industries not prospering with reasons and</p> <p>(c) the industries that can be started, should be published and circulated among the people especially, among the men carrying on trade, business, arts and industries.</p> <p>(D). <i>Those referred to the Forest Department</i></p>	
25	The plantation of <i>Ketki</i> and bamboos should be extended.	
26	A forest survey should be made.	

APPENDIX II—*contd.*

Serial No.	Suggestion.	Remarks.
1	2	3
27	<p>The Forest Department should take up the work of—</p> <ol style="list-style-type: none"> (1) sawing timber and other kinds of wood by machine ; (2) gathering forest products at State cost ; (3) managing the forest industries ; (4) plantation of useful plants, such as <i>Harda</i>, <i>Behda</i>, <i>Khakhra</i>, <i>Amla</i>, <i>Sukhad</i>, etc. ; (5) planting babul in the fallow and salt lands ; (6) creating forest in Sankheda Taluka ; (7) improving the present forests ; (8) removing <i>thoria</i> (cactus) in Okhamandal and planting useful trees instead ; and (9) preserving the small trees in the salt lands and cutting the large ones. 	
28	<p>The forest land fit for agriculture should be converted into agricultural land and the agricultural land not fit for the purpose may be turned into forest land.</p>	
29	<p>The east part of the Atarsumba Peta Mahal should be turned into forest and until the scheme matures lands more than 300 bighas lying in one lot should be prohibited from being cultivated.</p>	
30	<p>More attention should be given to permanent income, even if small, than to the replantation of trees.</p>	
31	<p>The forest should be protected from fire, and heavy grazing.</p>	
32	<p>Every farmer should be given encouragement and facilities to grow trees—specially, the edible fruit-bearing trees round the fields.</p>	
33	<p>Every village should have forests with clusters of trees.</p>	

APPENDIX II—*contd.*

Serial No.	Suggestion.	Remarks.
1	2	3
34	The right of cutting the forests should not be leased.	
35	Forests should be divided into sections and certain sections should be allowed to be cut only after a fixed period. Care should be taken that the forests destroyed may be replanted.	
36	<p>Anyone should be permitted to plant trees in the waste land belonging to the Government with the right to lease; the Government taking $\frac{1}{3}$th part of the wood when the tree might die.</p> <p>(E). <i>Those referred to the Forest and Industry Departments.</i></p>	
37	<p>The following forest industries can be started:—</p> <p>(a) the paper pulp can be manufactured from the bamboos;</p> <p>(b) lemon oil can be extracted from the lemon grass;</p> <p>(c) wood-spirit and acetic acid can be manufactured from inferior woods;</p> <p>(d) coal, tar, colour, gas, etc., can be prepared from volatile products;</p> <p>(e) toys and three-ply slippers can be prepared from inferior woods;</p> <p>(f) <i>katho (cetechu)</i> and <i>Eliya</i> can be manufactured from the juice of some trees;</p> <p>(g) industries pertaining to matches, mats, ropes, varnish, leather, bones and horns, wax, lac, <i>Harda</i>, <i>Behda</i>, <i>Keiki</i>, pencil, coal, <i>Bhindi</i>, bamboo, etc., can be started;</p> <p>(h) paper can be made of <i>Khakhra</i> and <i>baru</i> and <i>sarkat</i>, which are not utilized as fodder; and</p> <p>(i) colour can be prepared from <i>Kesuda</i> as well as from wood, flowers, and fibres of certain trees.</p>	

APPENDIX II—*contd.*

Serial No.	Suggestion.	Remarks.
1	2	3
38	The plantation of <i>Harda, Behda, Garmala, gugal, gum, musli, indrajaya, gokhru</i> and other products of medicine should be increased and they should be allowed to be taken away by those who need them.	
39	The Government should maintain a "Hay Press" for pressing the grass into bundles.	
40	The bamboos from 1/10th part of the plot and timber from 1/20th part should be cut every year. Elsewhere where the trees have grown very old a few of them ought to be cut.	
41	The Government should organise a Company to prepare chemicals from the waste products of the forests.	
42	The plantation of cinchona and <i>sonamukhi</i> should be undertaken.	
43	Systematic plantation of trees of commercial importance should be undertaken along the Railway lines or along the rivers as far as possible; if <i>sivris</i> be grown along the river Tapti, its wood would command instant sale in Bombay, Kathiawad, Sindh, etc. This tree grows rapidly and is more useful than any other kind of tree.	
	(F). <i>Those referred to the Forest and Revenue Departments.</i>	
44	Systematic arrangements should be made to plant <i>Babul</i> in Okhamandal.	
45	<i>Shimla</i> plantation should be undertaken in Naosari on a large scale near the Railway Station.	
	(G). <i>Those referred to the Industry and the Finance Departments.</i>	
46	Government should find money for the development of industries by starting an Insurance Company.	
	(H). <i>Those referred to the Agriculture Department.</i>	
47	Experiments should be made to improve the " <i>khara pat</i> " of Harij and Pattan by planting trees that will suck up salts or by drainage.	

APPENDIX II—*contd.*

Serial No.	Suggestion.	Remarks.
1	2	3
48	<p>The present irrigation facilities are inadequate; and to increase the facilities the following steps should be taken:—</p> <ol style="list-style-type: none"> (1) Government should undertake, as early as possible, at least one big irrigation project in each District; (2) wherever possible, the rivers should be bunded and their water utilized; (3) the boring operations should be extended; (4) the cultivators should be induced by means of liberal Tagavi grants and by decreasing the rates for <i>bagayat</i>, to dig wells; (5) the tank irrigation should be introduced; and (6) the existing water-falls should be harnessed for agricultural purposes. 	
49	<p>The books pertaining to agriculture should be distributed gratis.</p>	
50	<p>Agricultural Conferences should be held in every District, every year and information should be given to farmers through experts.</p>	
51	<p>Seed must be sold on credit to the cultivators or by <i>Tagavi</i> without charging any profits.</p>	
52	<p>Pure seed should be distributed for trial.</p>	
53	<p>Arrangements should be made to repair the improved implements, when required.</p>	
54	<p>Special depots should be opened in every Taluka and implements should be given on hire.</p>	
55	<p>The Veterinary branch of the Agriculture Department should distribute literature on the breeding of bulls, etc., and the cultivators should be instructed in the line of improving cattle.</p>	
56	<p>Berar bulls should be introduced.</p>	

APPENDIX II—contd.

Serial No.	Suggestion.	Remarks.
1	2	3
61	Good bulls should be sold at concession rates to breeders and farmers.	
62	Literature on the tried crops should be distributed widely.	
63	An Agricultural magazines with a nominal subscription should be published and may be distributed freely to cultivators.	
64	New crops should be bought by the Government or it should arrange in such a way that the producers can incur no difficulty in getting customers for their produce.	
65	Fruit canning and preservation should be encouraged.	
66	The Agricultural Inspectors should teach the best cattle breeding to the people.	
67	Hand-weaving, fibre, industry, knitting, embroidery, silk industry, bee farming and oil industries can be developed.	
68	Hand gins should be introduced and improved.	
69	Adulteration of food should be stopped.	
70	Bone manure should be prepared in the Kadi District.	
71	The Agriculture Department may be instructed to encourage the cultivation of Japanese (सिरेण) which will pay very well. At least the Department should make experiments with the help of Mr. Marolia, B. K., pioneer of the cultivation of that article in the Baroda State.	
72	Salt water being dangerous to industries in Billimora, the Commerce Department should arrange to supply sweet water.	
73	The export of manure to the adjoining foreign territories should be stopped.	
74	Ground-nut cultivation should be encouraged in Khambha.	

APPENDIX II—contd.

Serial No.	Suggestion.	Remarks.
1	2	3
	(I). <i>Those referred to the Agriculture and the Panchayat Departments.</i>	
75	Every Taluka should have a Veterinary Surgeon; and every village should have a good bull for which Government as well as the Panchayats must pay.	
	(J). <i>Those referred to the Agriculture, Commerce and Statistics Departments.</i>	
76	A census of the State's agricultural, forest and industrial products should be made and the average production per acre found out.	
77	The reliable statistics of the wholesale and retail prices throughout the Raj should be collected.	
	(K). <i>Those referred to the Panchayat Department.</i>	
78	The Village Panchayats should be empowered to issue permits to build the houses.	
79	The Mahajan institution of old should be revived and much of the work should be done through it.	
80	The Committees consisting of public leaders and Government officials should be formed by Districts and every question pertaining to the District should be discussed therein and the suggestions of the Committee should be taken into consideration by the Government.	
81	The Panchayats should be made more responsible than at present.	
	(L). <i>Those referred to the Revenue and Judicial Departments.</i>	
82	The Vahiwatdars and Aval Karkuns should not be given Criminal powers, excepting in Talukas where there is no Munsiff of the First Class. In such Talukas the Vahiwatdars (or the Aval Karkuns) should try cases with First Class powers.	

APPENDIX II—contd.

Serial No.	Suggestion.	Remarks.
1	2	3
83	<p>The revenue cases should be decided at the Taluka towns in the same way as the Criminal cases.</p> <p>(M). <i>Those referred to the Co-operative Department.</i></p>	
84	<p>Money-lenders advance money to the artisans at an exorbitant rate of interest. Therefore, Co-operative Banks should be started to render them pecuniary help at a low rate.</p>	
85	<p>The Co-operative Societies for weavers should be organised to develop the hand-loom industry.</p>	
86	<p>Sanitary chawls should be built by the Government direct or through the Co-operative Societies.</p>	
87	<p>Sale institutions should be started. Co-operative Societies can help a great deal in this matter and special co-operation for sale should be introduced or extended.</p>	
88	<p>Co-operative Dairy Societies should be started. Each Khatedar should be compelled to set aside certain area for fodder. The Dairy Companies with limited liabilities to own cattle should be encouraged.</p>	
90	<p>Industrial Co-operative Societies to organise the hosiery industry should be started.</p>	
91	<p>The cultivators must be educated in Co-operation.</p>	
92	<p>The benefits conferred by the Co-operative Societies are manifold. But the ignorant people of the villages do not understand the principles on which they are founded; therefore, the work cannot be done systematically. The members are also inexperienced.</p>	
93	<p>The people are afraid to take loans through the Government and the <i>Sawkars</i> threaten them. Men are also not wanting to lead astray. These are some of the difficulties that retard the progress of the Co-operative Societies. Attempts should be made to combat them.</p>	

APPENDIX II—contd.

Serial No.	Suggestion.	Remarks.
1	2	3
94	The Co-operative Societies only deal with money lending. They should also undertake the sale and purchase of the agricultural products.	
95	Only B. Ags. should be appointed as Co-operative Auditors.	
96	Dharwad system of purchasing the manufactured articles of the weavers should be temporarily introduced in this State.	
97	Yarn stores should be opened in every District.	
98	There should be a link amongst the Central agency, Taluka agency and the Co-operative Societies.	
99	Uptil now, most of the societies have proved unsuccessful. The reason lies in quick working; therefore, they should be formed only when the people themselves are willing to form them. In many societies, some of the members fraudulently misappropriate the money and do not refund it. These are the misuses of the facilities.	
100	The Agricultural Banks are not working properly. Songhad and Vyara Banks are unsuccessful; Bhadran Bank does good work; but nothing can be said of its future. The Amreli Bank is on a sufficiently sound basis.	
101	<p>The Co-operation should be extended and the Societies should advance money to the farmers for</p> <p>(1) paying the land assessment; and</p> <p>(2) buying seed, manure, implements, etc.,</p> <p>(N). <i>Those referred to the Engineer-in-chief for Railways and Communications.</i></p>	
102	<p>The following railways should be constructed:—</p> <p>(1) Harij to Radhanpur via Sankheswar.</p> <p>(2) Vagdod to Munsa.</p> <p>(3) Dangarva to Vijapur through Langhnaj, Gozaria, Vasai and Ladol.</p>	

APPENDIX II—*contd.*

Serial No.	Suggestion	Remarks.
1	2	3
	<p>(4) Vijapur to Vadnagar.</p> <p>(5) Vijapur to Visnagar.</p> <p>(6) Atarsumba to Dehgam or to Ahmedabad via Utkantheswar.</p> <p>(7) Naosari to Kamrej via Palsana.</p> <p>(8) Anawal to Mahuva.</p> <p>(9) Bahadarpur Line to be extended to Rustampur passing along Pania, Chandanagar and Lotia.</p> <p>(10) Petlad to Bhadran via Dharmaj.</p> <p>(11) A siding for the Alembic Chemical Works Company, Ltd., at Baroda.</p> <p>(12) Savli to Baroda.</p> <p>(13) Gandevi to Kathor via Naosari and Chalthan.</p> <p>(14) Vaghodia to Baroda.</p> <p>(15) Gandevi to Velachha via Naosari and Palsana.</p> <p>(16) Dhari to Velan through Khambha.</p> <p>(17) A broad-gauge line from Baroda to Goya-gate.</p>	
103	<p>1. The Kosamba-Zankhvav Railway line should be linked up with the Tapti Valley Railway through Lakhvi and Umarpada.</p> <p>2. The Kosamba-Zankhvav line should be extended as far as Umarpada with Songhad or Salher as a junction.</p> <p>(O). <i>Those referred to the Public Works Department.</i></p>	
104	<p>The following <i>pacca</i> roads should be made:—</p> <p>(1) Vijapur to Mehsana through Bilodra and Vasai.</p> <p>(2) Bilodra to Dangarva through Gozaria.</p> <p>(3) Vijapur to Vadnagar through Ladol and Jantral.</p>	

APPENDIX II—contd.

Serial No.	S ggestion.	Remarks.
1	2	3
	(4) Amreli to Lunavadar as far as Aldi frontier.	
	(5) Amreli Ankadia road should be made <i>pucca</i> and it should be extended as far as the boundary.	
	(6) Changad to Keriyawad and thence to Sajiawadar Station.	
	(7) Gokharval-Kundla road to Rajthali, Pithvadal and thence to Challala road.	
	(8) Damnagar to Shakhpur through Dhamel	
	(9) Naosari to Gandevi.	
	(10) Naosari to Chikhli.	
	(11) Chalthan to Antroli.	
	(12) Kholvad to Mangrol through Kathor, Velachha and Limbada	
	(13) Kathor to Velachha.	
	(14) Mangrol to Nani Naroli.	
	(15) Velachha to Panoli.	
	(16) Naosari town to the important villages of the Taluka.	
	(17) Dharmaj to Petlad-Cambay road.	
	(18) Bakrol to Anand or from Bakrol to Karamsad.	
	(19) Bhadran to Borsad.	
	(20) Petlad to Dharmaj road.	
	(21) Karjan to Dabka.	
105	The bridges should be constructed over the rivers at Sachin, Maroli, Nani Kurali and Chansad; and the one over the Vengania river should be raised.	
106	The roads from (1) Amreli to Kundla, (2) Amreli to Lotia, (3) Amreli to Bagasra, and (4) Amreli to Khamba are <i>pucca</i> but they require Nalas and repairs.	
107	There are no <i>pucca</i> roads in the Petlad Taluka. The existing roads should be repaired and extended 10 feet on each side.	

APPENDIX II—contd.

Suggestion.	Remarks.
2	3
<p>(P). <i>Those referred to the Education Department.</i></p>	
<p>108 The handicraft industries should be developed by giving scholarships to the sons of artisans.</p>	
<p>109 A system of agricultural education should be established throughout the State and practical and theoretical agricultural instruction should be given to the sons of farmers after the fourth standard for three years.</p>	
<p>(Q). <i>Those referred to the Excise Department.</i></p>	
<p>110 The use of Tadi, Bhang, Ganja, Wine, etc., should be discouraged.</p>	

APPENDIX II—*contd.*

(3) Those that are unimportant and need not be considered at all

Serial No	Suggestion.	Remarks.
1	2	3
1	<p>To prevent money-lenders cheating the farmer the following measures should be adopted:—</p> <p>(a) The account books of the <i>Sowkars</i> may be registered;</p> <p>(b) The maximum rate of interest may be fixed;</p> <p>(c) The rules may be framed regarding the money transactions;</p> <p>(d) The account books should be audited by Government auditors at the end of every year.</p>	
2	<p>No commission (<i>சீஸ்டாபிள்</i>) should be charged when one pays the Government dues through any other Taluka Treasury.</p>	
3	<p>Government should find money for the development of industries by opening a monthly lottery; half of the proceeds should be spent in developing industries, research, etc., the other half being distributed in prizes</p>	
4	<p>A railway should be constructed to Dwarka.</p>	<p>Already under consideration.</p>
5	<p>The exporters of manufactured goods should be provided rebates.</p>	
6	<p>The Government should appoint an Industrial Advisory Board composed of industrial leaders, business people and industrial experts to investigate the new and old industries, conduct experiments, etc.</p>	<p>There is one already.</p>
7	<p>The industries should be rendered pecuniary help through a Committee consisting of</p> <p>(1) the Commissioner of Commerce, etc.,</p> <p>(2) the Director of Industries, as Secretary,</p> <p>(3) the Director of Commerce,</p> <p>(4) the Accountant-General,</p> <p>(5) a business man, and</p> <p>(6) a practising engineer.</p>	<p>A Finance Committee has been appointed.</p>

APPENDIX II—*contd.*

Serial No.	Suggestions.	Remarks.
1	3	3
8	The Government should engage a Chartered Accountant to audit the accounts of the Joint Stock Companies for the protection of the shareholders.	Rules to that effect have been made.
9	The farm wages should be fixed progressively when there is scarcity of labour.	
10	The permanent settlement should be introduced.	
11	The grass auctioning should be stopped and it should be given for a lump sum—which should be an average of the last five years' income to the Government.	
12	The land speculation should be stopped and it should be given to the bona fide cultivators.	
13	Cow-dung should be prohibited from being used as fuel.	
14	At present, no improvement in the implements is necessary.	
15	Every Khatedar should be compelled to maintain a particular number of cows.	
16	All the produce of the cultivators should be bought by Government.	
17	The dairies should be closed and all butter export should be stopped.	
18	Long term tenancy contracts should be made—say, from 3 to 10 years.	
19	No legislation for the regulation of tenancy contracts is at present needed and if the State passes any law it should not inconvenience the cultivators.	
20	No interest should be charged on the Tagavi grants.	
21	The Tagavi should be given in the presence of the Panchayat or by the Agricultural Inspector provided a certificate from the Panchayat is produced.	
22	The Government should fix the rate of interest.	

APPENDIX II—*contd.*

Serial No.	Suggestions.	Remarks.
1	2	3
23	The Agricultural Banks should accept deposits from the agriculturists and pay interest.	
24	The Khatedars of a Bank should not be allowed to contract debt in any other way.	
25	No civil suits to recover the debts from the agriculturists should be entertained by the Courts.	
26	To stop the agriculturists being indebted, the Government should stop the expensive and evil customs prevalent among the people by enacting laws.	
27	The export of cotton and other food products should be restricted during the days of famine and dearness.	
28	Duty on Kerosine Oil should be removed at Billimora.	
29	The Child Marriage Act should not be applied to the classes in which widow-marriage is allowed	
30	The Compulsory Education Act should not be applied to the lower classes.	
31	The course of study upto Standard IV should be made compulsory.	It is already made so.
32	The rules regarding <i>കുടുംബ</i> should not be fully exercised upon the Kaliparaj people.	
33	The assessment should not increase at every Settlement.	
34	The Stamp Act, the Income-tax and the Miscellaneous fines should be done away with.	
35	The Companies' Act should be made less strict.	
36	The Law regulating the forced labour and the Stamp Act should be repealed.	
37	The Law Courts should be decreased and the dispute settled by arbitration.	
38	The customs duties should be absolutely removed and the taxes suggested by the people should be levied instead.	
39	The water-tax should be abolished.	

APPENDIX II—contd.

Serial No.	Suggestions.	Remarks.
1	2	3
40	The taxes levied by the Municipalities and the Vishishta Panchayats are harmful.	Vague.
41	The duty on alcohol should be removed.	
42	The Government should levy a tax on import and increase the same on export.	
43	Arrangements should be made to cash the Promissory Notes at the Government Treasuries.	
44	The inquiries like the present should be made every year.	
45	The Department of Commerce and Agriculture should have complete powers. They should not be placed in a position to write to other Departments for works purely their own.	
46	The Administration should be divided into two parts—(1) Legislative; (2) Executive. The members of the Legislative Assembly should be elected by the people and that of the Executive must be the Heads of Departments; both to be presided by His Highness the Maharaja Saheb.	
47	The Government should adopt a liberal policy about the Vatans of the Vatandars.	
48	All the laws should be made with the public consent in the Legislative Assembly.	
49	Commercial Societies should be established and the Government should lend money to the merchants.	
50	Higher rights should be conferred on the <i>Khatedars</i> and their status raised.	
51	The Government should restrict the cotton cultivation.	
52	The business of foreign merchants should be brought to an end.	
53	The farmers should be redeemed from their debts.	
54	Begging should be forbidden.	
55	The Naib Subas are not necessary; they should be engaged in the Suba Office.	

APPENDIX III.

A list of the important Government publications utilized in preparing this Report:

1. Reports on the Census Operations in the Baroda State for 1881, 1891, 1901 and 1911.
2. Report on the Agricultural Indebtedness in the Baroda State by Mr. Manilal B. Nanavati.
3. Annual Reports of the—
 - (a) Revenue,
 - (b) Co-operative,
 - (c) Commerce and Industry,
 - (d) Sanitary,
 - (e) Finance and
 - (f) EducationDepartments.
4. Notes on Industrial Development in the Baroda State by Mr. Manilal B. Nanavati.
5. Statistical Abstract of the Baroda State from 1907-08 to 1916-17.
6. Report of the Committee appointed to make proposals on the Consolidation of small and scattered holdings in the Baroda State.
7. Statistical Atlas of the Baroda State by R. B. G. H. Desai
8. Report of the Vitality Commission.
9. Report of the Baroda Prices Inquiry Committee, 1918.

APPENDIX IV.

Statement showing the rainfall (in inches) during the last 27 years.

No.	Year.	Kadi.	Baroda.	Naosari.	Amreli.	Remarks.
1	2	3	4	5	6	7
1	1890-91	20·71	26·86½	53·6½	17·3	
2	1891-92	22·98	33·13½	62·5	22·72	
3	1892-93	46·99	41·82	64·21	25·14	
4	1893-94	48·79	43·79	58·55	19·77	
5	1894-95	35·56	69·99	75·76	33·83	
6	1895-96	26·99	29·35	39·54	17·49	
7	1896-97	29·42	44·19	64·27	21·41	
8	1897-98	22·85	32·99	47·59	29·8	
9	1898-99	23·18	48·1	49·42	13·26	
10	1899-1 00	3·75	5·39	18·62	4·77	
11	1900-01	22·25	31·61	45·93	26·41	
12	1901-02	12·88	22·35	30·80	7·68	
13	1902-03	25·20	29·90	54·87	22·16	
14	1903-04	21·68	33·66	55·12	24·58	
15	1904-05	9·80	17·6	25·40	7·56	
16	1905-06	33·99	25·82	31·74	10·38	
17	1906-07	32·7	37·47	48·5	23·8	
18	1907-08	34·87	30·65	44·15	19·41	
19	1908-09	32·90	35·10	47·9	21·41	
20	1909-10	29·18	33·51	61·52	27·26	
21	1910-11	25·74	47·79	54·20	26·16	
22	1911-12	6·45	16·35	27·77	9·47	
23	1912-13	45·10	44·23	64·77	29·28	
24	1913-14	34·40	54·65	53·96	28·2	
25	1914-15	27·2	48·1	65·19	27·49	
26	1915-16	11·23	24·17	33·42	12·53	
27	1916-17	27·32	36·78	58·64	19·89	

APPENDIX V.

Mineral Resources of the Baroda State.

I.—METALS.

No.	Material.	Locality, etc.	Nearest Ry. Station or Port.	Quantity.	Industrial Value.	References.	REMARKS.
1	Iron	Naroli Nahni—bed of the Laterite ridge, Velachha Taluka, Naosari District.	Velachha ..	An abundant supply of moderately rich ore.	Smelting Works	Foote's Geology of Baroda, pp. 72; 112.	
2	"	Bank of the Tapty, near Vajpur and Songadh, Kamrej Taluka, Naosari District.		An immense quantity of rich Magnetic Iron Sand.	Do.	Do.	
3	"	In eocene rocks about half a mile to the south of Vijapur, Vijapur Taluka, Kadi District.	Vijapur ..	A thin small bed.	Nil.	Iyer's Mineral Resources of Baroda, p. 104.	
4	"	Bed of Haematite iron near Phudhera.	Vijapur ..	....	Nil.	Do. p. 104.	
5	"	Haematite in lenticular patches in Achali Hills, near Achali in Sankheda Taluka, Baroda District.	Jojwa ..	Very small outcrop.	Nil.	Do. p. 105.	
6	Silver	On the bank of the Tapty river near Ghala, Kamrej Taluka, Naosari District.	Sion or Kim ..	Quantity remains to be determined.	Percentage is very small in the clay found on the surface.	....	Further investigations are to be made.
7	Gold	In the high bank of the Heran river a little S. E. of the small village Sigam 6½ miles S. E. by S. from Sankheda, Sankheda Taluka, Baroda District.	Sankheda-Bahadarpur.	Traces	Nil.	Foote's Geology of Baroda. pp. 37; 115. Iyer's Mineral Resources of Baroda, p. 100.	The quantity is too small to justify any attempt at mining for it. Mr. Iyer suggests to make trials near Songir, Londra and Sigam all in the Sankheda Taluka.

II.—CHEMICALS.

No.	Material.	Locality, etc.	Nearest Ry. Station or Port.	Quantity.	Industrial Value.	References.	REMARKS.
1	Iron Pyrites.	On the Bank of the Tapti river, near Ghala, Taluka Kamrej, Naosari District.	Sion or Kim ..	Large quantity is expected.	Good for the manufacture of crude sulphuric acid and other kindred trades	....	Further investigations are necessary.
2	Bauxite ..	Kuranga, Okamandal, Amreli District.	Only 1½ miles from the creek.	A bed 1½ inch thick.	Manufacture of Alum ..	Iyer's Mineral Resources of Baroda, p. 11.	"General prospecting work of bauxite should be undertaken."
3	Seaweeds..	Near the low cliffs on the Dwarka Coast, Okhamandal Taluka, Amreli District.	....	A few tons ..	The ash of the burnt weeds contains "traces of Iodine" and 5.53 per cent. of Potash."	Do. pp. 70 (a) and (b).	IYER. Experiments are being made to find out the quantity of Iodine.
4	Salt ..	(1) Creeks near Bhimrana, Rajpura and Charkla in Okhamandal, Amreli District. (2) Near Mul-Dwarka in Kodinar Taluka, Amreli District.	Dwarka Port .. Mul-Dwarka Port.	500 tons near Rajpura, 5,300 tons in Bhimrana Creek, 4,300 tons at Charakla annually. With a little improvement the formation could be increased several times. The deposits are formed naturally by the evaporation of seawater that accumulates in the creeks.	Material for the manufacture of Soda and bleaching powder.	Do. pp. 58; 70.	

II.—CHEMICALS—*contd.*

No.	Material.	Locality, etc.	Nearest Ry. Station or Port.	Quantity.	Industrial Value.	References.	REMARKS.
5	Natural Soda.	(1) Mev and Khookas, in Mehsana Taluka and Kada in Visnagar Taluka and various other places in the Kadi District.	Mehsana ..	The extent of the Alkali ground is nearly a sq. mile near Khookas. The aggregate area in the district is likely to be several miles.	The refined soda may be used in the manufacture of glass and soap and also for washing purposes.	Iyer's Mineral Resources of Baroda, pp. 48 ; 58.	.....
	....	(2) Rajpura and Tupni in the Okhamandal Taluka, District Amreli.	....	In small areas ..	.....	....	....
6	Fuller's Earth.	(1) Kurunga, Okhamandal, Amreli District.	Dwarka ..	A layer 8" thick..	"This substance yields a soft absorbant powder and that it should make a good Fuller's Earth."—Mr. Faneett, of the Tata's Research Institute.	Do. p. 12 ..	....
	....	(2) Naroli Nahani, Velachha Taluka, District Naosari.	Velachha..	Some deposits of highly arenaceous clayey substance.	Do. do. ..	Do. p. 12. ..	"This deposit should be tested for Fuller's Earth." IYER.

III.—GLASS, PORCELAIN, FIRE-BRICKS, Etc.

No.	Material.	Locality, etc.	Nearest Ry. Station or Port.	Quantity.	Industrial Value.	References.	REMARKS.
1	Sandstone sand.	Fine grained stone is found on the right bank of the Sabarmati near Pedhamali. The coarser grained stone under the above series at this point is noted in several of the cross valleys called Kothars.	Vijapur	Large quantity ..	A fine grained sandstone can be used in the manufacture of bottles and bangles. It is also suited as a moulding material for foundry work. Can also be used as blasting sand. The coarser grained stone may be used for the manufacture of sheet and plate glass. The occurrence of China clay at Vijapur (5 miles) will enable various mixtures to be prepared suitable for several clay-industries, as fire bricks, glass pots and other refractory wares, besides porcelain.	Iyer's Mineral Resources of Baroda, pp. 16, 21, 10, 26.	The coarser kind of Sandstone of Pedhamali is as good as that of Fontainebleau, which is considered the purest sand for glass manufacture.
2	Sand ..	The Orsang river bed near Bahadarpur — Sankheda, Baroda District.	Bahadarpur ..	Any amount ..	Though not a good material for manufacture of glass, it may be tried at least for wine-bottles. It is considered good for sand bricks.	Do. pp. 22-23.	

III.—GLASS, PORCELAIN, FIRE-BRICKS, Etc.—*contd.*

No.	Material.	Locality, etc.	Nearest Ry. Station or Port.	Quantity.	Industrial Value.	References.	REMARKS.
3	Sand	Bed of the Vatrak river at Mandwa in the Atarsumba Sub-Taluka, Dehgam Taluka, Kadi District.	Nadol Dehgam	Any amount	This is locally used for the manufacture of glass.	Foot's Geology of Baroda, p. 134.	
4	Do.	Dwarka and Aramra beach	Dwarka and Aramra.	Any quantity	The silica content is low and calcium carbonate forms the main constituent. It may be tried for the manufacture of wine-bottles.	Iyer's Mineral Resources of Baroda, p. 23.	
5	Quartz sand.	2½ miles S. E. of the Sankheda Fort and close to the right bank of Unch river.	Bhadrapur Sankheda.	A small ridge exposed for a couple of hundred yards.	Materials for glass and China manufacture.	Foot's Geology of Baroda, pp. 28; 120.	
6	China Clay.	On the right bank of the Sabarmati river about a mile to S. E. of the village of Ransipur, Vijapur Taluka, Kadi District.	Vijapur	Known extent of the deposit is 975 feet by 170 ft., average thickness 3 feet. Quantity available 27,000 tons. Extensive deposits are likely to be found in the vicinity.	Raw material for the manufacture of firebricks, glass pots, porcelain and various clay products. Also useful for Portland cement industry if pure lime stone is available in the neighbourhood.	Iyer's Mineral Resources of Baroda, pp. 1; 8; 44.	

IV.—CEMENT.

No.	Material.	Locality, etc.	Nearest Ry. Station or Port.	Quantity.	Industrial Value.	References.	REMARKS.
1	Calcareous material for cement manufacture.	In the bed and bank of the River Kim, in Velachha Taluka, Naosari District.	....	Large quantity ..	It is a stone good for the manufacture of natural cement and also hydraulic lime. Can be used also as a ballast or road metal.	Foot's Geology of Baroda, p. 133. Iyer's Mineral Resources of Baroda, pp. 35; 42.	
2	Do. ..	Coral limestone near Aramra reef, Okhamandal Taluka, Amreli District.	Dwarka Port ..	....	Good for manufacturing lime and also Portland cement.	Foot's Geology of Baroda, p. 180. Iyer's Mineral Resources of Baroda, p. 43.	
3	Do. ..	Gopi clay in the sacred tank of Gopi or Rajpura. Cliff sections to S. W. of Beyt Island, Okhamandal Taluka, Amreli District.	Dwarka Port ..	A large area round about Rajpur	Material for hydraulic lime and cement.	....
4	Do. ..	Segar quarry stone near Dwarka, Rupen Khadi.	Dwarka Port ..	Large quantity ..	Limestone and clay found near Dwarka, are good materials for the manufacture of cement.	Mr. H. W. Anderson's special report.	
5	Miliolite ..	Harmadia, Adavi, Dolasa, in the Kodinar Taluka.	A few miles from the Velan port, on the Kathiawar coast.	Practically inexhaustible.	Stone similar to Porbander stone and can be sewn. Also useful for the manufacture of Portland cement.	Foot's Geology of Baroda, p. 176. Iyer's Mineral Resources of Baroda, pp. 80; 85.	

V.—COLOURWASH, PIGMENTS AND COLOURS.

No.	Material.	Locality, etc.	Nearest Ry. Station or Port.	Quantity.	Industrial Value.	References.	REMARKS.
1	Yellow and Red Ochres	(1) Near Ransipur, Vijapur Taluka, Kadi District.	Vijapur	Large quantity ..	For the preparation of mineral paints and ultramarine colour and flooring and roofing tiles.	Iyer's Mineral Resources of Baroda, p. 7.	
		(2) In Ghalla village, near Kathore in Kamraj Taluka, Naosari District.	Sayan	Do	Do. .. ..	.. ..
		(3) Near Nahni Naroli, Taluka Velachha, District Naosari.	Velachha.. ..	Good quantity ..	Do. .. ..	.. ..
2	Red-marls.	Eastern Coast of Okhamandal Taluka, Amreli District.		Do. ..	Material for bright colour-wash.	Foote's Geology of Baroda, p. 130.	

VI.—MARBLE STONES.

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No.	Material.	Locality, etc.	Nearest Ry. Station or Port.	Quantity.	Industrial Value	References.	REMARKS.
1	Marble	Near Motipura, Sankheda Taluka, Baroda District.	Motipura..	....	It is dark green, white and pale-pink, most beautiful marble in India. There is a complete set of quarrying machinery to work the marble.	Footo's Geology of Baroda, pp. 26, 119. Iyer's Mineral Resources of Baroda, pp. 77; 88.	A railway passes by Motipura. The stone can be conveyed cheaply to Baroda and other neighbouring places.
2	Do.	Near Wadeli, Sankheda Taluka, District Baroda.	Chuchapura ..	....	Marble of very great beauty and delicacy.	Footo's Geology of Baroda, p. 120.	Do.
3	Do.	In the bed and banks of the river Heran, near Sandhara Sankheda Taluka, Baroda District.	Sankheda-Bahadarpur.	....	Beautiful pink marble for flooring purposes.	Footo's Geology of Baroda, pp. 35, 121, 122. Iyer's Mineral Resources of Baroda, p. 93.	
4	Do.	1½ miles E. S. E. of Pipalwa and 4 miles S. of Lapala Hills. Dhari Taluka, Amreli District.	Dhari or Chalala	Stone coloured mottled buffy white and grey which could be dressed and polished into a handsome marble.	Footo's Geology of Baroda, p. 174.	

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VII.—BUILDING STONES.

No.	Material.	Locality, etc.	Nearest Ry. Station or Port.	Quantity.	Industrial Value.	References.	REMARKS.
1	Granite ..	Near Virpur in the bed and banks of Sabarmati river, Vijapur Taluka, Kadi District.	Vijapur ..	A small area 2½ miles long from N. to S. in its extreme length	Pale-pink to greyish pink stone of great durability, remarkable for its intrinsic beauty, capable of being quarried in large masses and susceptible of very high polish.	Foote's Geology of Baroda, pp. 22, 23, 117.	
2	Do. ..	Bed and bank of the Orsang river at Bhulvan and Motipura, round about. Bodeli, Sankheda Taluka, Baroda District.	Motipura..	6½ miles from N. to S. and from 2 to 4½ miles from E. to W. and 40 to 50 feet above the alluvial flat.	Decorative stone of considerable beauty. Ordinary building stone of great strength and excellent quality. Also road metal.	Foote's Geology of Baroda, pp. 24, 128. Iyer's Mineral Resources of Baroda, p. 97.	A railway runs along close to the granite area. The stone can be conveyed cheaply to Baroda and other neighbouring places.
3	Gneiss ..	(1) Near Jojwa, Sankheda Taluka, Baroda District. (2) 1½ miles to the S. E. of Tandalja in the bed of water course, Sankheda Taluka, Baroda District.	Jojwa .. Bodeli ..	.... Abundant ..	Do. .. Very useful for flooring, as slabs of 3" to 4" thick can be quarried.	Iyer's Mineral Resources of Baroda, pp.98-99. Do. pp. 98-99.	

VII.—BUILDING STONES—*contd.*

No.	Material.	Locality, etc.	Nearest Ry. Station or Port.	Quantity.	Industrial Value.	References.	REMARKS.
4	Quartzite	(1) Near Lachharas, Sankheda Taluka, Baroda District. (2) The hills to the north of Achali, Sankheda Taluka, Baroda District.	Indrol on Motipura-Tanakhala Railway under construction. Jojwa	Practically inexhaustible supply. 	Stone useful for foundations, dams, weirs, etc., also a good building stone, but unsuitable for architectural and decorative work. Slab stone 1" to 3" thick for flooring and also stones 6" to 9" thick for heavy masonry work.	Foot's Geology of Baroda, pp. 31, 122, 123. Iyer's Mineral Resources of Baroda, p. 96. Do. p. 95.	
5	Basalt	Most of the Talukas of the Naosari District.	....	....	Building stone, Road metal.	Foot's Geology of Baroda, pp. 57 to 64, 128. Do. p. 172.	
6	Do.	About 3 miles from Amreli Town in Tankshar quarry at Gavadka, 5½ miles S.W. of Amreli, Amreli Taluka and Amreli District.	Amreli	Any Amount	Good stone for building purposes.	Do. p. 172.	
7	Do.	At Katma, Akadia Mota and Jalia, Amreli Taluka, Amreli District.	Gavadka .. ..	....	Valuable stone of great strength and durability and of pleasing colour.	Foot's Geology of Baroda, p. 73.	
8	Do.	S. E. of Rupavati Tappa of Damnagar Taluka, Amreli District.	Damnagar .. ..	....	Excellent material for pillars, bases, steps, panels and other architectural work.	Do.	
9	Do.	In the bed and banks of Dev River near Waghodia, Baroda District.	Waghodia .. ..	....	Rubble stone for building purposes.	....

VII.—BUILDING STONES—*contd.*

No.	Material.	Locality, etc.	Nearest Ry. Station or Port.	Quantity.	Industrial Value.	References.	REMARKS.
10	Laterite ..	At Kurel in Mahuva Taluka, Naosari District.	Naosari .. ..	....	Building stone. It lends itself well to being cut and dressed; also good for road-metal.	Foote's Geology of Baroda pp. 81, 132.	
11	Do. ..	Near Gandevi in Naosari District.	Gandevi .. ..	....	Lateritic clay suitable for Mangalore tiles.		
12	Miliolite ..	Harmaria, Adavi, Dolasa in Kodinar Taluka, Amreli District.	A few miles from Port Velan on the Kathiawar Coast.	Practically inexhaustible.	Stone similar to Porbander stone and can be sewn. Also useful for manufacture of Portland cement.	Foote's Geology p. 76. Iyer's Mineral Resources of Baroda, pp. 80; 85.	
13	Limestone.	(1) At and to the south of Rajpura Bunder on the south side of Beyt Harbour. (2) South of Barlia, Okhmandal Taluka, Amreli District.	.... One mile from the Gontli creek.	.... ....	Building stone, fine grained and of pleasing appearance. Building stone of pleasing pinkish yellow colour, suitable for decorative purposes.	Foote's Geology of Baroda, pp. 163, 179. Do. pp. 164, 180.	It would make a very pretty yellow marble, very suitable for vases, slabs, pedestals and other ornamental objects.

VII.—BUILDING STONES—*concl'd.*

No.	Material.	Locality, etc.	Nearest Ry. Station or Port.	Quantity.	Industrial Value.	References.	REMARKS.
14	Sandstone	(1) Near Songir, on the left bank of the Heran river, also S. W. of Parvat and eastward of Lachharas, Sankheda Taluka, Baroda District.	Sankheda - Bahadarpur, at present. Indrol on M. T. Railway under construction.	Practically inexhaustible supply.	Valuable building stone. Also good stone for hand mills. This stone is far superior to any sand stone <i>viz.</i> , Dhangadhra or Ahmadnagar or Khumaj. Wastage of stone can be used for manufacture of glass and for Dinas bricks.	Foote's Geology of Baroda, pp. 43, 124, 127. Iyer's Mineral Resources of Baroda, pp. 90, 93, 21, 22, 26.	This sand is as good as the sand of Fontainebleau, which is considered the purest sand used in England for glass manufacture.
		(2) 2½ miles south of the village of Amroli, Sankheda Taluka, Baroda District.	Amroli	Not known	Building stone of fairly good quality.	Foote's Geology of Baroda, p. 127.	
		(3) At Pudhera in Vijapur Taluka, Kadi District.	Vijapur	Large quantity	"Slabs, pillars, water troughs, etc., may be made. The stone may be sewn into bricks, burnt and tried as fire-bricks and refractory blocks and be made into similar objects of a refractory nature." IYER.	Foote's Geology of Baroda, pp. 67; 130. Iyer's Mineral Resources of Baroda, pp. 86, 89.	This stone is soft enough to admit of being carved into ornamental objects.

VIII.—MISCELLANEOUS MINERALS.

No.	Material.	Locality, etc.	Nearest Ry. Station or Port.	Quantity.	Industrial Value.	References.	REMARKS.
1	Agates ..	<p>(1) In the Majham river, a tributary of the Watrak at Derdhapaori in Dehgam Taluka, Kadi District.</p> <p>(2) At Naroli Nahani in Velachha Taluka, Naosari District.</p> <p>(3) At the North of Ghala in the Kamrej Taluka, Naosari District.</p>	<p>....</p> <p>Velachha ...</p> <p>Sayan or Kim ..</p>	<p>Large quantity ..</p> <p>Do.</p> <p>Do. ..</p>	<p>They are of considerable beauty, quite handsome enough to be well worth slicing and polishing.</p> <p>Deposits (Agates) at Naroli Nahani contain large numbers of valuable agates, heliotrope and coloured cherts. Materials for Lapidary's industry.</p> <p>.....</p>	<p>Foote's Geology of Baroda, pp. 135, 139, 140, 181, 184.</p> <p>Iyer's Mineral Resources of Baroda, pp. 71; 77.</p> <p>....</p>	
2	Gypsum ..	A mile westward of the village Kuranga, Okhamandal Taluka, Amreli District.	1½ miles from the creek. Dwarka.	Recent formation.	For the manufacture of Plaster of Paris.	Foote's Geology of Baroda, pp. 16; 180.	

IX.—FISHERY PRODUCTS.

No.	Material	Locality, etc.	Nearest Ry. Station or Port.	Quantity.	Industrial Value.	References.	REMARKS.
1	Chanks ..	From Manekpur to Adatra Point and thence to Poshitra and also around Beyt Harbour, Okhamandal Taluka, Amreli District.	Beyt Harbour ..	Quantity not known. The right to collect chanks is farmed out every year.	These are exported to Bengal where bangles and rings are made from them. They are also sold to pilgrims.	....
2	Window Pane Oysters.	Balapur Bay and the area between Poshitra and the frontier, Okhamandal Taluka, Amreli District.	....	Quantity not known. The right to collect is every year leased out and brings in on an average Rs. 15,000 to the Government.	These yield very small pearls. They are generally exported to China where they are used for medicinal purposes. Some pearls are used in ornaments also.	....
3	Real Pearl Oysters.	Reefs of Adatra, Borio and Mangunda, Okhamandal Taluka, Amreli District.	....	Quantity insignificant.	.....	....

APPENDIX VI.
Forest Resources of the Baroda State.
I.—TIMBER SPECIES.

(A) Major :

Serial No.	Species.	Vernacular names.	Commercial uses.	Quality.	Distribution.
1	<i>Acacia arabica</i>	Babul	Wheels, well-curbs, sugar and oil presses, rice-pounders, agricultural implements, tool-handles, boat-building, rafters excellent for tentpegs; one of the best charcoal woods in parts of Bombay and Sind; carved dies for stamping; coloured patterns on cloth are made of this wood.	Hard and durable	Common in Vyara, Sankheda and Vankal Ranges and obtained in fair quantities in other ranges generally round about cultivation outside the forest.
2	<i>Adina cordifolia</i>	Haladwan	Combs, small articles of turnery, furniture, boxes and dug-out, canvas, brush-backs; beams, house-posts, scantlings and planking.	Moderately hard and durable	In fair quantities in Vyara, Sadedvel and Songadh Ranges.
3	<i>Albizzia procera</i>	Kelai	Beams, scantlings and planking furniture, boats, well-curbs and wheel-work.	Hard and fairly durable	Do. do.
4	<i>Anogeissus latifolia</i>	Dhamoda	Tool-handles, poles, axles, one of the best charcoal wood.	Great strength and toughness but do not last well under water; used in Bengal for spinning wheels.	Very plentiful in Songadh, Vajpur and Sadedvel Ranges and in small- in V-

5	<i>Acacia catechu</i> ..	..	Khair ..	..	Used for oil-presses, sugar mills and rice-pounders; used for bed-steads and other articles of furniture. Probably the best charcoal wood for black-smiths and brass founders; makes excellent and very durable posts for house-building.	Can be used under water. Used in the Central Provinces for spokes of spinning wheels and parts supporting the wheel, for hand loom, and for the muthia or mogri, a dumb-bell shaped piece of wood for striking the pinjan or bow-shaped apparatus used in cleaning cotton.	Fairly plentiful in Vankal, Sankheda, and Gir, and in small quantities in other Ranges.
6	<i>Bassia latifolia</i> ..	..	Mohura, Mahuda ..	..	H o u s e-building, furniture, country vessels, naves of wheels.	Hard heavy.	Common in Vyara, Songadh and Sadedvel, Vajpur and Nanchal Ranges.
7	<i>Bridelia retusa</i> ..	..	Asana ..	..	Building, carts and agricultural implements.	Moderately hard and close grained, durable under water.	In small quantities in Vyara, Songadh and Sadedvel Ranges.
8	<i>Butea frondosa</i> ..	..	Khakhar ..	..	Suitable for wood-pulp as it has been recently definitely ascertained.	Light, weighs about 35-40 lbs. per cubic foot; wood dirty-white porous soft.	Extremely abundant all over the forests of this State.
9	<i>Bombax malabaricum</i> ..	..	Samal, Sammar ..	..	Oil casks. The most important Indian wood hitherto extensively used for match manufacture.	Very light, weighing under 30 lbs. per cubic foot.	In small quantities in Vyara, Songadh, Vankal and Sankheda Ranges.
10	<i>Dalbergia latifolia</i> ..	..	Sisham ..	..	Furniture, carving, gun-carriages.	"Rosewood" or "Blackwood"; extremely hard and close grained, very durable.	In fair quantities in almost all the Ranges.

I.—TIMBER SPECIES—*con td.*

Serial No.	Species.	Vernacular names.	Commercial uses.	Quality.	Distribution.
11	Garuga pinnata	Kakad	Used for musical instruments.	Wood soft and light, and is chiefly used for fuel in North India but is much prized for house-posts in Eastern Bengal for its durability. The tree can be easily propagated by cuttings and is occasionally thus planted in hedge-rows elsewhere.	In very small quantities in almost all the Ranges.
12	Gmelina arborea	Sevan	Planking, furniture, carriages, one of the most generally used species for yokes, well-works, boats, toys, ornamental work.	Seasons well, easily worked and does not warp or split.	Do. do.
13	Grewia tilioefolia	Dhaman	Shafts, masts, golf clubs, tool-handles, oars.	Great elasticity, strength and toughness.	In very small quantities in almost all the Ranges.
14	Holarrhena antidysentrica.	Inderjav	Turnery and furniture, much used for carving into small articles like paper-knives, picture-frames, spoons, forks.	Soft and even-grained	Very plentiful in Sadodvel and Songadh and Vajpur Ranges. In smaller quantities in other Ranges.
15	Morinda tinctoria.. ..	Alio, or Aal	Plates, dishes	Moderately hard, close grained, and durable.	In abundance in the Vankal Range and in smaller quantities in Sankheda, Vyara and other Ranges.

16	<i>Ougenia dalbergiodes</i>	.. Tanach ..	.. A good strong furniture wood.	..	Common in Sadedvel, Vajapur, Vankal and Songadh Ranges.
17	<i>Odina Wodier</i>	.. Modal ..	.. Spear shafts, wheel-spokes, rice-pounders, cabinet work, sleepers for temporary lines.	Moderately hard ..	Fairly plentiful in Vyara Range, more abundant in Vankal and in Songadh Ranges and in smaller quantities in other Ranges
18	<i>Pterocarpus Marsupium</i>	.. Bceya ..	.. Furniture, cart and boat-building; beams, scantlings, door and window frames, etc., one of the chief building timber of the Central Provinces.	.....	In fair amount in all the Ranges.
19	<i>Schleichera trijuga</i>	.. Kosam ..	.. Oil and sugar mills, rice pounders, agricultural implements and carts; one of the best charcoal wood..	Very strong and durable, but does not last well in water.	Only fairly common in Sadedvel Range and much less in other Ranges.
20	<i>Soymida febrifuga</i>	.. Royan ..	.. Furniture, construction of well work, plough shares, oil-mills.	A very hard dark reddish brown wood.	Very common in Sankheda and nearly absent in other Ranges.
21	<i>Stephegyne parviflora</i>	.. Kalam ..	.. Building, furniture, combs, cups, spoons, platter and small articles of turnery.	Moderately hard and durable if not exposed to wet.	Fairly plentiful in Vyara along the banks of nallas as well in Songadh, Vajpur and Sadedvel.
22	<i>Tectona grandis</i>	.. Teak; Sag ..	.. Ship-building, railway carriages, house-building, carpentry and furniture.	"Teak." Moderately hard and durable. The wood of our Forests and that of the Dangs is much better as regards hardness and durability than that of Malabar.	One of the principal species of our Forests. Its best growth is in Vyara, Songadh and Sadedvel Ranges.
23	<i>Terminalia belerica</i>	.. Beheda ..	.. Planking, packing cases, canoes, coffee boxes.	Hard, durable under water. ..	In very small quantities in every Range.
24	<i>Terminalia tomentosa</i>	.. Sadra, Sadad ..	.. Beams and rafters, scantlings and planking for houses, bridges, carts and furniture.	Hard and durable ..	One of the principal species of our Forests. It is very abundant in Vyara, Vajpur and Songadh, where it attains a good height and girth.

(B) Minor:

II.—TANNING AND DYEING MATERIALS.

Serial No.	Species.	Vernacular names.	How obtained.	Quality.	Distribution.
1	Acacia arabica	Babul ; बाबुल	Bark and pods	The most extensively used bark in India for tanning ; brown dyes are produced from the bark.	Common in Vyara, Sankheda and Vankal Ranges and in fair quantities in other Ranges, generally round about cultivation.
2	Acacia leucophlaca	Anyar ; अनार	Bark	The most extensively used bark in India for tanning ; the bark gives a black or red dye.	Very common in Sankheda Range.
3	Acacia catechu	Khair ; खैर	Boiling chips of wood	This species is found in several parts of India. An extract made by boiling the wood in water is still largely used in dyeing. Catechu is exported to Europe for use in dyeing and tanning. Catechu may be applied to all fibres, though it is most largely used for dyeing cotton. The usual method of dyeing cotton consists in boiling the goods with an extract of catechu with the addition of copper sulphate, the weight of the copper salt being 10 per cent. of the weight of the colouring matter. The goods are squeezed, allowed to stand for a short time and then boiled in a fresh hot bath containing 2 per cent. bichromate of potash, washed and dried. Catechu brown is one of the fastest colours known.	Plentiful in Vyara and Vankal Ranges as well in Songadh, Sadedvel and Gir and Sankheda.

4	<i>Bauhimia racemosa</i>	Asintra ; असिन्त्रा	Bark	<p>The bark yields a red dye which is largely associated with tannin. The dye is not very bright, but nevertheless it may be employed for dyeing dull reds on cotton without the help of any mordant. Cotton seems to have an affinity for it. Faster results are obtained on alumina or tin 'mordant. Its bark is said to be used in Burma for obtaining a dull black colour on cotton. For this purpose the cotton is dyed direct in an infusion of the bark and is then worked in mud, whereby the dull red colour is changed into a black. The bark can be had in any quantity and may be of service to tent manufacturers who require a dull red colour for the inside of tents.</p>	Plentiful in Vyara, Songadh and Sadedvel Ranges; in fair quantities in other Ranges.
5	<i>Butea frondosa</i>	Khakher ; खखर	Flowers	<p>In the United Provinces, the dye extracted from the flowers is still largely used by villagers for sprinkling on their persons as a mark of festivity at Holi festival, about which time the tree is in full bloom. The dried flowers are, however, available throughout the year. The flowers contain a yellow brown to dull crimson according to the mordant used. The dyeings are fairly fast to milling.</p>	Extremely abundant in almost all the Ranges of the Forests of this State.

II.—TANNING AND DYEING MATERIALS—*contd.*

Serial No.	Species.	Vernacular names.	How obtained.	Quality.	Distribution.
6	<i>Cassia auriculata</i>	Aavel; .. ଅମୱାଳ	Bark	Bark of the most valuable tannin in India. Gives a buff colour to leather. In Madras Presidency this plant fetches a large revenue to the Forest Department. In Gir forests of this State it is also called Rangari by the "Chammars" of Kodinar, who know the art of extracting a dye from this.	Found in Gir and Sankheda Ranges.
7	<i>Casulpinia sepiara</i>	Chilari; .. କିଲିରି	Bark	Used for tanning	Found in Vyara, Songadh, Sadedvel and Vajpur Ranges. In creeper cutting operation may have been cut away.
8	<i>Indigofera tinctoria</i>	Gulce; .. ଗୁଲ୍‌ସି	Leaves.. .. .	A blue dye is extracted	Found especially in Gir in abundance and in other Ranges.
9	Lac dye	Lakh; .. ଲାକ	From the encrustations formed by the lac insects on certain trees.	The substance is of animal origin. It is the product of a small insect called <i>Coccus lacca</i> which lives on the twigs of certain trees such as khakher, pipal, ber and kosam. The incrustation produced by these insects on	.....

				the twigs of the trees consists of (1) resinous matter, (2) colouring matter. The colouring matter is dissolved out by means of water or a weak alkali, the resin being left behind. The latter or melting and straining through canvas cloth constitutes shellac. The colouring matter is precipitated from its solution by means of alum and is afterwards pressed into cakes and sent out either for export or for sale locally. Lac dye is dyed on wool chiefly on tin mordant. It yields beautiful scarlet and crimson shades.	
10	Morinda tinctoria	.. Aal or Aalee ; आल, आली	.. Bark of the root .. ..	.. Largely used for dyeing red and yellow in several places in India.	In abundance in the Vankal Range and in smaller quantities in Gir, Vyara and Sankheda and other Ranges.
11	Olina wodier	.. Moddel ; मोदल	.. Bark .. ..	.. A brown tan	Fairly plentiful in Vyara Range and more abundant in Songhad Range, especially in Mogran forests, also in other Ranges.
12	Phylanthus emblica	.. Aamla ; आमला	.. Bark and fruits	.. Fruits called emblic myrabolams which are rich in tannin and are used for tanning and dyeing.	Most abundant in Sadedvel Range; common in Vyara Vankal, Songhad and other Ranges.
13	Symida febrifuga ..	.. Roinee ; रोनी	.. Bark .. ..	.. For tanning	Plentiful in Sankheda Range, especially in Wardella forests, where a pure big patch of this species exists.

II.—TANNING AND DYEING MATERIALS—*contd.*

Serial No.	Species.	Vernacular names.	How obtained.	Quality.	Distribution.
14	<i>Terminalia tomentosa</i> ..	Sadad or Nadra ; .. ಸಾಡಾಡಿ	Bark	Used for dyeing leather black.	One of the principal species of the forests. (1) Very common everywhere.
15	<i>Zyziphus xylopyra</i> ..	Gutt Board ..	Fruit	Used in tanning to give a black dye to leather.	Common all over the forests of this State.

III.—EDIBLE PRODUCTS.

1	<i>Cordia myxa</i>	Goondi	Fruits .. .. .	.....	In small quantities in Vyara, Songadh and Sadedvel and other Ranges.
2	<i>Feronia elephantuna</i> ..	Kavath, kot .. ಕವಾಠ, ಕೊಟ	Fruit s	Pulp of the fruit is made into a jelly wood apple.	Scarcely found in the forests; generally cultivated in the gardens.
3	<i>Eugenia Jambolana</i> ..	Jambool; ಜಾಂಬೂಲ	Fruits	Astringent, but not at all bad in tarts and puddings.	Fairly common in Sadedvel, Songadh and Vyara and other Ranges.
4	<i>Bassia latifolia</i> ..	Mahwa Mhowra or Mahuda. ಮಹವಾ ಮಹೂರಾ	Flowers	The corollas of these flowers are eaten fresh or dried, ground and mixed with flour for bread or are distilled into Mahwa spirit, an intoxicating liquor.	Common in Vyara, Songadh, Sadedvel and Vajpur and other Ranges.

5	Morinda tinctoria ..	Aal or Alle,	Fruits	Used as vegetable .. paraj people	Saukhya Ranges.
6		Gogda Gogdi; गोगडी	Do.	Do. do. ..	Very plentiful in Vyara, Songadh and Sadedvel Ranges, and also elsewhere.

IV.—PLANTS WHICH ARE USED AS DRUGS.

1	Acacia leucophloea ..	Anyur; आनूर	Stem	Gum. Resembles gum-bassora.	Very common in Sankheda Range.
2	Aegle quercinifolia ..	Beelee	Fruits	For diarrhoea and dysentery..	Very common in Gir, Sankheda and Vankal Ranges and in fair quantities in other Ranges.
3	Ailanthus excelsa ..	Limbaro	Bark	Febrifuge and tonic in dyspeptic complaints.	Not a forest species but planted in public gardens and along roads.
4	Albizia Lebbeck ..	Saras	Seeds	Official, forming part of an Anjan used in ophthalmic diseases.	Found in all ranges scattered about.
5	Bombax malabaricum ..	Sammar, Semal; सामर, सेमर, सेमल	Bole roots	"Macharac." gum. Taken with milk as tonic.	Found in fair quantities in Gir, Vyara, Songadh and other Ranges.
6	Butea frondosa ..	Khakher; खखर	Bole seeds	Ruby gum "Bengal Kino," "Chimya Gond" used as astringent. Used as a vermifuge for elephants and horses.	The commonest species of the forest and found in great abundance.
7	Cassia fistula ..	Garmala; गरमाला	Pulp of the pods [..	Strong purgative ..	Common in Vyara, Vajpur, Songadh and Sadedvel and other Ranges.

IV.—PLANTS WHICH ARE USED AS DRUGS—*concid.*

Serial No.	Species.	Vernacular names.	How obtained.	Quality.	Distribution.
8.	<i>Garuga pinnata</i>	Kakad ; કાકડ	Bole	Gum	} Common in Vyara, Vajpur, Songadh and Sadedvel and other Ranges.
9	<i>Grewia tilicefolia</i>	Dhaman ; ધામણ	Bark	For dysentery	
10	<i>Holarrhena antidyserica.</i>	Inderjav ; ઈન્દરજવ	Root and seeds	Powerful antidyseric, astringent, febrifuge, and anthelmintic properties.	Very common in Sadedvel Songadh, and Vajpur Ranges and also seen in Vyara and other Ranges.
11	<i>Pongamia glabra</i>	Karanj ; કરંજ	Seeds	Oil. Valuable medicinal oil for skin diseases and rheumatism	Generally found along the banks of nullahs and streams in Gir and Vyara and other Ranges.
12	<i>Pterocarpus marsupium</i> ..	Beeyo ; બેયો	Bole	Gum "Kino" of commerce. A valuable astringent containing about 75 per cent. tannic acid.	Common in almost all the Ranges.
13	<i>Soymida febrifuga</i>	Rohini ; રોહિની	{ Bole { Bark	Affords a good mucilage Used as a febrifuge and stimulant.	Plentiful in Sankheda Range especially in Wordella Forest, where a pure big patch of this species exist.
14	<i>Cymbo poyan Martinu</i> (Rusa grass).	Rusa grass	By wet distillation process ..	Used as a tonic and in cases of fever.	.....

V.—OIL SEEDS.

1	<i>Scheichera trijuga</i>	.. Kosam ; કોસમ	..	The oil expressed from the seeds.	Used locally for cooking and burning, and has been found suitable for soap-making.	Fairly common in Sadedvel Range.
2	<i>Gatropa curcas</i>	.. Ratanjot ; રતનજોત	..	Do.	Oil, Lamp oil, transparent soaps and substitute for olive oil in dressing woollen clothes	Cultivated in the villages round about the forest as hedges.
3	<i>Pongamia glabra</i>	.. Karanj ; કરંજ	..	Do.	Oil. Used in medicine and also for lighting.	Generally found along the edges of streams and nullahs in Gir, Vyara and other Ranges.

VI.—FIBRE-YIELDING PLANTS.

1	<i>Acacia arabica</i>	.. Babul ; બાબુલ	..	Bark of the slender twigs	For coarse ropes and suitable for the manufacture of paper	Common in Vyara, Sankheda and Vankal Ranges, and in fair quantities in other Ranges generally round about cultivation.
2	<i>Bauhinia racemosa</i>	.. Asintra અસિત્રા	..	Bark	Strong and durable rope	Plentiful in Vyara, Sangadh and Sadedvel Ranges ; in fair quantities in other Ranges.
3	<i>Butea frondosa</i>	.. Khakher ખાકેર	..	Bark	Strong fibre for paper-making and cordage.	Extremely abundant in almost all the Ranges of the forests of this State.
4	<i>Calotropis gigantea</i>	.. Ankado અંકડો	..	Stems	Fibre found to bear 552 lbs. against 407 borne by some hemp and 224 lbs. borne by "coir." Suitable for paper-making.	Found outside the forest in open spaces.

VI. FIBRE-YIELDING PLANTS—*contd.*

Serial No.	Species.	Vernacular names.	How obtained.	Quality.	Distribution.
5	<i>Cordia myxa</i>	Goondi ગુંદી	Bark	Ropes and for caulking boats, fuses.	In small quantities in Vyara, Songadh or Sadedvel and other Ranges.
6	<i>Grewia titiaifolia</i>	Dhaman ધામણ	Inner bark	For cordage	
7	<i>Helicteres isora</i>	Marda Singh or Medasingh or Attai. મરદાસીંગ, મેદાસીંગ અટાઈ	Bark	Ropes, rough sacking, canvas, paper-making.	Generally growing gregariously on tops of hills or in open spaces in the forests. Found everywhere in abundance.
8	<i>Pongamia glabra</i>	Karanj કરંજ	Bark	For felt	Generally found along the edge of the nullahs and streams in Gir, Vyara and other Ranges.
9	<i>Stephegyne parviflora</i> ..	Kalam	Bark	For cordage	Very common in Vyara Range and in smaller quantities in all other Ranges.
10	<i>Terminalia tomentosa</i> ..	Sadad or sadra ..	Bark	For cordage	Found in great abundance in almost all Ranges to a great size.
11	<i>Stereulia urens</i>	Kagdolee કાગડોલી	Bark	Strong cordage fibres ..	Very common in shallow rocky soils. Seen in Vyara, Sadedvel, Vajpur and Songadh Ranges.

12	<i>Ougenia dalbergioides</i>	Tanach	Bark	Strong fibres, suitable for rope or rough cordage.	Very plentiful in Sadedvel, in smaller quantities in Vyara, Songadh and other Ranges.
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VII.—MISCELLANEOUS PRODUCTS.

1	<i>Andropogan muricatus</i>	Khus-khus grass ; ਅਸਾਖਰ	Roots	Yields from its roots a fibre which is made into aromatic scented mats hung over doors and windows and kept wet to afford coolness in the hot weather.
2	<i>Anogeissus latifolia</i>	Dhamodo ; ਖੜੋਲ	.. ..	Bole	.. ..	Gum extensively used in cloth-printing.	Very plentiful in Songadh, Sadedvel and Vajpur Ranges.
3	<i>Bauhimia racemosa</i>	Asintra ; ਅਸੀਰੀ	.. ..	Leaves	.. ..	Cheroot wrappers, used in country cigarettes as wrappers.	Plentiful in Vyara, Songadh and Sadedvel Ranges ; in fair quantities in other Ranges.
4	<i>Dendro calumus strictus</i>	Male bamboos ; ਗੰਜ	.. ..	Culms	.. ..	Male bamboos, building, basket and mat work, walking sticks, lance shefts, etc.	In great abundance in Vajpur.
5	<i>Odina wodier</i>	Modal ; ਮੋਢੀ	.. ..	Bole	.. ..	Gum used for paper-sizing, cloth-printing, in mixing with lime when white-washing.	Fairly plentiful in Vyara Range and more abundant in Songadh Range, especially in other Ranges.

VII.—MISCELLANEOUS PRODUCTS—*contd.*

Serial No.	Species.	Vernacular names.	How obtained.	Quality.	Distribution.
6	Diospyros melanoxylon ..	Timru ; ટીમરુ	Leaves	Cheroot wrappers ; used in country cigarettes as wrappers.	Plentiful in Sadedvel, Songadh and Vajpur and in other Ranges.
7	Abrus precatorius ..	Chanothee ; .. ચાનોથી	Seeds	Used as goldsmith's weight.	Very plentiful all over.

Note.—Areas of different Forest Ranges. Sq. M.

Naosari District, Vyara	98
Do. Songadh	123
Do. Vajpur	143
Do. Sadedvel	67

Naosari District, Vankl	116
Kathiawar, Gir	71
Baroda District, Sankheda	44

APPENDIX VII.

Rail-borne Statistics of the Baroda State from 1915-16 to 1917-18, Net weight in Indian Maunds.

No.	Articles.	1915-16.			1916-17.			1917-18.			Remarks.
		Export.	Import.	Interprovincial.	Export.	Import.	Interprovincial.	Export.	Import.	Interprovincial.	
1	2	3	4	5	6	7	8	9	10	11	12
1	Apparel	239	1,772	142	222	1,465	134	442	1,592	37	
2	Coal and Coke	1,01,872	14,86,350	..	1,16,165	18,77,029	534	3,01,160	17,89,581	544	
3	Cotton, raw	5,18,156	1,96,329	10,064	13,77,860	3,22,512	5,787	11,18,479	2,07,789	5,458	
4	Cotton manufactured ..	52,334	1,36,107	1,587	72,899	1,34,687	4,142	60,399	1,21,158	1,348	
5	Chemicals excepting salt-petre	562	13,481	26	143	11,820	7	588	17,065	3	
6	Drugs	4,220	15,123	290	15,589	11,519	327	6,043	11,538	269	
7	Dyes and Tans	18,156	37,285	5,259	33,234	39,065	9,377	37,522	31,072	6,040	
8	Fodder	7,11,559	1,09,862	77,540	3,38,991	45,365	4,344	4,82,913	2,11,130	1,618	
9	Fruits & vegetables, fresh.	38,171	89,249	16,638	66,519	80,337	12,638	73,970	1,35,005	11,795	
10	Grain and pulse	6,60,136	37,09,551	76,036	1,08,250	27,58,182	88,284	6,44,000	35,35,289	98,616	
11	Hides and skins	15,238	9,229	1,848	10,893	24,060	1,742	10,614	17,170	1,182	

12	Horns	179	3	2	190	20	..	105	31	..
13	Hemp and other fibres (excluding jute) ..	1,123	2,454	168	2,249	1,279	1,245	892	1,738	486
14	Jute, raw, gunny-bags and jute-cloth	40,342	53,069	9,063	35,005	62,207	2,533	35,264	51,745	1,605
15	Lac	990	112	22	662	86	5	151	2,028	30
16	Leather, unwrought and wrought (excluding boots and shoes) ..	8,981	4,273	294	9,633	4,909	294	7,802	5,183	226
17	Liquors	4,157	13,155	8,183	6,163	14,741	9,441	8,221	15,088	10,551
18	Metals	30,617	1,86,690	3,702	33,046	1,26,707	5,538	79,034	1,16,474	7,289
19	Mineral substances ..	1,10,802	12,35,498	242	2,68,608	7,79,270	708	4,65,988	14,16,506	10,847
20	Oils (including kerosine)..	37,716	1,86,940	2,534	57,335	1,96,587	5,264	82,172	2,41,253	1,037
21	Oil seeds	10,87,443	5,24,314	5,15,452	12,46,176	4,93,844	1,08,548	13,65,697	4,46,130	1,08,240
22	Opium .. .. .	..	92/1	173	..	12/29	161/34	..	14/9	137/33
23	Paper and paste-board ..	177	11,070	788	391	6,782	472	250	7,720	745
24	Provisions	2,30,110	2,35,323	5,253	2,13,610	2,46,364	8,053	2,34,903	2,46,687	8,661
25	Railway plant and rolling stock	97,955	2,64,861	18,807	71,654	1,57,654	14,679	1,46,142	1,59,167	17,416
26	Salt	2,124	3,04,184	25	2,854	3,07,009	75	9,229	3,51,348	3,631
27	Saltpetre and other saline substances	71,433	3,881	3	1,636	3,835	4	11,631	3,566	32
28	Silk, raw & manufactured	3/2	355/21	..	19/39	97/37	..	13/4	44/10	..

APPENDIX VII—*contd.*

No.	Articles.	1915-16.			1916-17.			1917-18.			Remarks
		Export.	Import.	Interprovincial.	Export.	Import.	Interprovincial.	Export.	Import.	Interprovincial.	
1	2	3	4	5	6	7	8	9	10	11	12
29	Spices	28,402	71,913	6,976	44,529	73,347	8,557	23,540	1,00,114	973	
30	Sugar	39,813	5,52,048	33,995	46,741	6,21,305	38,841	54,355	7,14,465	50,368	
31	Tea	89	4,539	15	91	5,579	..	224	7,293	1	
32	Tobacco, manuf- and unmanufactured ..	1,47,588	33,987	10,120	2,33,944	34,415	9,182	1,78,078	25,304	9,729	
33	Wood, timber and manu- factured	1,82,681	5,52,472	76,038	1,84,731	5,03,528	35,683	3,16,166	5,70,008	57,018	
34	Wool, raw & manufactured	13,305	371	365	10,486	341	..	8,170	3,826	1	
35	All other articles of mer- chandise	10,94,415	9,03,365	56,513	11,41,061	9,24,375	71,059	24,26,819	6,85,263	1,07,401	
	Total ..	53,31,089 /2	1,09,59,807 /22	9,38,163	66,93,970 /39	98,30,335 /26	4,47,658 /34	81,90,976 /4	1,12,43,284 /19	5,23,374 /33	

<i>Treasure.</i>										
Silver coin (Government Rupees) in oz.	..	..	..	4140	12,48,270	1,320	1,58,422	26,62,065	1,30,440
Silver bullion in oz.	..	..	..	18,150	7,640	..	8,428	56,280	870
Nickel, copper and bronze coin in oz.	..	..	..	9,900	900	..	..	29,910	..
Total	..	..	..	69,390	12,56,810	1,320	1,66,850	17,48,255	1,31,310
Animals, No.	..	1,01,890	67,076	2,806	84,311	53,003	822	86,376	68,693	943

Note.—The above statistics do not include those for the Amreli District as they are not available.

APPENDIX VIII.

Sea-borne Statistics of the Baroda State from 1915-16 to 1917-18.—Net weight in Indian Maunds.

No.	Articles.	1915-16.		1916-17.		1917-18.		Remarks
		Export.	Import.	Export.	Import.	Export.	Import.	
1	2	3	4	5	6	7	8	9
1	Bricks, stones, lime	2,99,027	1,09,148	3,07,072	1,20,356	1,26,263	1,33,636	
2	Chemicals .. .. .	..	5	..	..	..	..
3a	Clay pots (No.) .. .. .	..	..	..	..	..	3,000	
b	Coal .. .. .	..	42,019	..	2,731	..	..
4	Cotton, raw	18,180	4,626	8,181	575	22,976	16	
5	Cotton-manufactured	80	764	50	911	..	872	
6	Drugs	25	2	76	..	98	1	
7	Dyes and tans	55	2	91	..	2,393	..	
8	Firewood	1,52,611	..	1,77,996	15,403	1,44,367	20,658	
9	Fish, fresh and salted	8,920	1,744	11,938	3,825	3,849	7,448	
10	Fodder	1,383	428	40,270	1,450	10,105	..	

11	Fruits and vegetables, fresh	..	..	..	18,283	3,039	4,439	1,092	5,846	1,784
12	Grain and pulse	..	..	..	34,515	78,836	28,458	1,58,322	52,626	84,319
13	Hides and skins	..	..	..	..	..	454	..	(No.) 300	..
14	Horns	..	..	..	16	..	3	..	26	..
15	Hemp and other fibres	..	..	..	1,264	1,682	3,306	2,261	494	1,067
16	Gunney bags	..	..	..	546	26	287	10	45	216
17	Leather	..	..	..	..	72	..	..	..	..
18	Mahuda flowers	..	..	..	..	3,188	..	1,702	..	2,003
19	Metals	..	..	..	236	5,358	15	4,261	2,130	2,625
20	Oils (including kerosine)	..	..	..	2,995	3,451	5,026	9,096	2,266	2,043
21	Oil-seeds	..	..	..	15,175	78,409	17,945	96,683	29,689	12,348
22	Papers	..	..	..	..	132	..	62	..	74
23	Provisions	..	..	..	6,258	2,318	8,176	2,122	5,579	1,353
24	Salt	..	..	..	14,200	..	13,190	..	10,475	..
25	Silk, raw and manufactured	..	..	..	..	0/6	..	..	..	..
26	Spices	..	..	..	10,272	24,294	2,565	53,359	4,944	19,784
27	Sugar	..	..	..	10,869	35,359	22,231	14,057	2,692	19,603
28	Timber	..	..	..	5,073	1,01,770	8,145	1,47,630	13,793	1,00,770
29	Tobacco	..	..	..	3	973	..	580	..	158

APPENDIX VIII—contd.

No.	Articles.	1915-16.		1916-17.		1917-18.		Remarks.
		Export.	Import.	Export.	Import.	Export.	Import.	
1	2	3	4	5	6	7	8	9
30	Wool	908	..	1,170	..	685	..	
31	All other articles of merchandjse	40,217	11,854	57,202	10,274	86,557	19,225	
	Total ..	6,00,551	5,05,401/6	7,18,286	6,46,762	5,25,898 300 Skins.	4,29,993 3,000 Clay pots.	
	<i>Treasure (in oz.),</i>							
..	Silver coins .. . . .	..	400	9,800	3,180	..	1,600	
..	Silver bullion and ornaments	5,940	261	2,304	491	2,58,548	366	
..	Gold and golden ornaments .. ..	..	170	..	164	..	144	
	Total ..	5,940	831	12,104	3,835	2,58,548	2,110	
	Animals (No.) .. ..	..	2	..	7	..	1	

APPENDIX IX.

and Disbursements of the Baroda State for the year 1917-18.

Receipts.		No.	Disbursements.	
Description of items.	Rs.		Description of items.	Rs.
2	3	4	5	6
Land Revenue	1,14,36,811	1	Land Revenue	20,36,542
2 Miscellaneous Taxes	2,40,920	2	Other Revenue Branches	1,70,615
3 Forests	3,24,171	3	Forests	87,040
4 Abkari	20,60,042	4	Stamps	47,400
5 Customs	1,93,421	5	Registration	43,931
6 Stamps	7,12,890	6	Tribute, etc., received through the Residency	7,12,890
7 Registration	1,56,090	7	Tribute, etc., received direct	78
8 Tribute and fixed Jamabandi received through the Residency	7,03,804	8	Opium	63,674
9 Tributes and fixed Jamabandi received direct	14,720	9	Railways .. ..	.....
10 Interest	10,02,254	10	Palace	18,15,813
11 Village Boards Revenue	11,372	11	Huzur Raj Karbhar—	
12 Opium	5,33,765		(a) Tour expenses .. ..	.....
13 Railways	11,09,763		(b) Huzur Kutchcherries	7,33,815
14 Irrigation	17,418	12	Judicial	3,84,022
15 Palace .. ..	.....	13	Police	8,42,542
16 Judicial fees and fines	82,058	14	Jail	69,530
17 Jail	18,684	15	Education	22,82,887
18 Education	1,33,660	16	Medical	3,58,987
19 Municipalities	60	17	Printing Press	81,356
20 Public Works	2,19,625	18	Local Boards, etc.	5,75,496
21 Miscellaneous (including Ferries, Police, General Administration, etc.)	7,14,523	19	Municipalities	2,000
		20	Public Works	20,90,459
		21	Army	17,70,065
		22	Devasthan Dharmadaya	2,43,313
		23	Assamdars Nemnukdars	5,33,927
		24	Pensioners	2,62,600
		25	Marriage in the Royal Family	2,70,000
		26	Extraordinary including Famine, etc.	6,501
		27	Miscellaneous including Interest, Ferries, Irrigation, etc.	41,74,335
Total	2,02,86,051		Total	1,89,46,549

APPENDIX X.

Summary of Recommendations of the Vitality Commission.

1. Steps should be taken to secure that all children attending State Schools should be periodically weighed and measured.
2. All possible measures should be taken to improve system of registration of vital occurrences.
3. Registration sections of Bombay Municipal Act, *mutatis mutandis*, should be made operative within all Municipal areas, and forms for registration prescribed.
4. Medical Department should prepare a scheme for improvement of morbidity statistics on the lines of Bombay City practice.
5. Presidents of Municipalities and District Boards should be empowered to carry out the proposals of the Sanitary Department with or without consent of their colleagues.
6. Government should fix a scale of taxation for each Vishishta Panchayat and Municipality.
7. Formation of a Sanitary Department; its functions.
8. Formation of an Advisory Council.
9. Designs for wells to be sanctioned and approved by Chief Medical Officer.
10. Drainage schemes should be taken up at the same time as those for water-supply.
11. More attention should be paid to sanitation as a subject in the training of Police and Revenue Officers.
12. Government should make its Officers see that sanitation is an elementary necessity.
13. Hospitals and Dispensaries should be provided, maintained and staffed by the Central Government.
14. Legislation to prohibit employment of children of school-going age.
15. Registration of all milk-sellers and cow-keepers, periodical analysis of milk, and enforcement of hygienic principles in the sale.
16. Prevention of adulteration of ghee and food-stuffs.
17. Factory legislation for factory hygiene and sanitation.
18. Special inquiry needed as to desirability of registration to shorten hours of labour.

19. Advantages of inoculation against plague should be everywhere preached to the people.
20. Special action necessary in towns and villages which are annually ravaged by plague.
21. Facilities to encourage evacuation desirable.
22. Notification of occurrence of cases of contagious or infectious disease and registration of all medical practitioners.
23. Rigorous enforcement of sanitary rules for fairs, and, when necessary, their prohibition.
24. Revenue officers should report outbreak of disease to the Medical Officer of health direct, and to their Revenue superiors at the same time. The Sanitary Department should prepare a code of rules in this connection.
25. Vaccination should be made compulsory in Baroda.
26. A vigorous war against the mosquito, on lines to be laid down for each place by a sanitary survey which will be under taken by the Sanitary Department.
27. General measures against malaria.
28. Trained midwives should be employed by each town.
29. Penalties under the Child Marriage Act should be made more deterrent.
30. All the children in the Baroda City schools be periodically examined by qualified medical men. Actual scheme to be worked out by the Medical Department in consultation with the Education Department.
31. Medical Officers in charge of hospitals and dispensaries should inspect the schools of their station once a month and report.
32. A general inquiry as to the proportion of children attending schools actually suffering from want of proper food.
33. Creation of special boarding schools for backward children.
34. Greater prominence should be given to organised games and physical exercise in the school curriculum.
35. Questions concerning sanitation of Baroda City should be removed from the control of the Municipality.
36. As large grants as possible should be made for improvement of City slums and areas.
37. Regulations needed for new buildings and demolition of old ones.
38. Whole drainage work should be completed in five years. Rs. 6,00,000 to be devoted to it annually.
39. Water-supply should be continuous, not intermittent.
40. Cattle should be prevented from straying in the vicinity of Ajwa Lake.
41. The City's night-soil should be properly disposed of in trenches.
42. Provision of Infectious Disease Hospital, a disinfecting station, and a staff of sanitary inspection in the City.

APPENDIX XI.

A list showing how far the recommendations of the Vitality Commission have been carried out.

A list of the recommendations of the Vitality Commission having been given in Appendix X, the numbers of recommendations referred to in the first column of the following table are the same as the correspondence numbers in Appendix X.

Number of recommendations made by the Vitality Commission.	Carried out.	Partially carried out.	Not carried out.	Remarks.
1	2	3	4	5
1	Yes.	..	
2	Yes.	..	
3	Yes.	..	
4	Not known.	
5	Not.	
6	Not.	
7	Not.	
8	Yes.	..	..
9	Not.	
10	Not.	
11	Yes.	..	
12	Not.	
13	
14	Not.	
15	Not.	
16	Not.	
17	Yes.	..	
18	Not.	
19	Yes.	..	
20	Not.	
21	Not.	
22	Not.	

APPENDIX XI.—*contd.*

Number of amendments by the Vitality Commission.	Carried out.	Partially carried out.	Not carried out.	Remarks.	
1	2	3	4	5	
23	Yes.	..	Inquiries made of the Chief Medical Officer.	
24	Yes.	..		
25	Yes.	..	..
26		
27	Yes.	..		
28	Not.		
29	Yes.	..		
30	Yes.	..		
31	Not.		
32	Not.		
33	Yes.	..		
34	Yes.	..		
35	Not.		
36	Yes.	..		
37	Yes.	..		
38	Yes.	..		
39	Not.		
40	Yes.	..		
41	Yes.	..	..
42	Yes.	..		
Summary :—					
3 Carried out;		
18 Partially carried out; and					
21 Not carried out		

APPENDIX XII,

श्री.

१. अनुक्रम नंबर. अंक नंबर.
- २, ८. स्वतंत्र हुजूर हुकूम असल्याने हकीकत नाही.
९. हुजूरचा ठराव.

हु. का. क. मुलकी खाते हु. हु. नं. ए १८.

हुजूर हुकूम.

सीमनी जमीन गामठाणथी दूर होवाथी खेडुतो वावेतर सहेलाईथी जोई शकता नथी अने तेमने केटलीक हरकतो वेठवी पडेछे एवुं श्रीमंत सरकार महाराजा साहेब वदेश. एमने निवेदन थवाथी थती अडचणो दूर थाय अने तेमने व्याजबी सवलतो मळे ए हेतुथी कृपावंत थई आज्ञा कीधी छे के—

२. एवी दूरनी जमीननो कोई खातेदार पोताना खातानी जमीनमां एक जथ्ये घरो बांधवानी परवानगी गाम नोकरी संबंधी नियम मुजब के बीजा कोई नियम मुजब सरकारमांथी कोईपण प्रकारनी मदद नहि मागतां मागे तो खातानी जमीनमां, घर बांधवा संबंधीना नियममां ठराव्या मुजब आकार लेवानी सरते, परवानगी आपवी.

३. वेपार के नफानी खातर नहि पण उपर मुजब वसता खेडुत लोकोनी जरूरी हाजतो पुरी पडे ते सारू हजाम, कुंभार, सुतार, लुहार, मोची, भंगी, डेड, खालपा विगेरे लोकोने माटे जे घरो बांधवामां आवशे तेने पण उपर ठरावेली सवलत मळी शकशे. मात्र कोई वेपार माटे एवी जमीनमां जे घरो करवामां आवशे तेना संबंधमां हालना चालू नियमने अनुसरी धारो तथा दंड आपवो पडशे.

४. एवा एक अने जथ्ये बांधिला घरोनी संख्या
क. पंदर अगर तेथी वधारे अने पचासनी अंदर होय तो तेने पकं तथा गामनी व्याख्या. पकं अने
ख. पचास अगर तेथी वधारे होय तो तेने गाम कहेवामां आवशे.

५. उपर मुजब नवीन वस्ती थई वसेलां गामोने तथा जे पराने माटे गाम नोकर संबंधी के बीजा कोई नियम मुजब सरकारमांथी मदद मागवमां आवशे ते पराने गामठाणनी जमीन संबंधी निबंध, नियम विगेरेना सर्व ठरावो लागु थशे.

६. सर्वे खातामांथी हाल जे जमीननी प्रतवारी करवामां आवे छे तेमां गामथी खेडाण करवानी जमीननुं अंतर ध्यानमां लई आनीमां जे कमी-जास्ती करवामां आवे छे तेज धोरण पेटा परुं ए पण एवा प्रसंगे गामनी माफक समजी तेने लागु करवुं.

७. उपर मुजब जे नवीन घोरो बांधवामां आवशे तेने गामठाण संबंधी नियममां रस्ता राखवानुं धोरण. रस्ता राखवानुं जे धोरण ठराववामां आवेलुं छे ते लागु थशे.

८. आ हुकुमनो लाभ लेवा जे शखसो परवानगी मागशे तेमने वहीवटदर महाल-परवानगी सत्वर आपवी. करीए सत्वर परवानगी आपवानी त. िज करवी.

९. श्रीमंत सरकार महाराजा साहेबनी एवी इच्छा छे के, आ हुकुमनो लोको छूट-थी लाभ ले अने तेथी जे स्थळे गींच वस्ती हशे ते स्थळे छूटक आरोग्यता तथा सुखा-कारीमां वृद्धि थाय एवी छूटक वस्ती थई लाकोनी आरोग्यतामां तथा सुखाकारीमां वृद्धि थाय. श्रीमंतनी इच्छा छे.

ता. ६ फेब्रुआरी सन १९१५.

(ई. सही.) जी. बी. आंबेगांवकर,

न्यायमंत्रि.

APPENDIX XIII (Table No. 1).
Financial position of Agricultural Banks from 1906-07 to 1917-18.

Year.	Liabilities.							Resources.							Remarks
	Capital.			De- posits.	Sur- plus.	Re- serve.	Total Liabili- ties.	Loans.			Real Estate.	Other Assets.	Cash on hand in Banks, etc.	Total sources.	
	State.	Private.	Total.					To Co- opera- tive Societies.	To Indi- viduals.	Total.					
	1	2	3					4	5	6						7	8	9	10	11	12	13	14	15	16
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1906-07	17,500	2,760	20,260	31,211	4,077	8,353	63,901	..	45,514	45,514	..	126	23,261	63,901	
1907-08	17,500	5,810	23,310	42,253	4,424	10,928	80,915	..	64,273	64,273	..	126	17,516	80,915	
1908-09	17,500	11,220	28,720	53,448	4,727	13,050	99,945	..	70,857	70,857	..	174	23,894	99,945	
1909-10	25,000	12,450	37,450	53,015	4,850	13,398	1,08,713	..	78,706	78,706	..	225	29,782	1,08,713	
1910-11	31,250	17,275	48,525	72,545	6,763	5,630	1,41,563	..	1,03,129	1,03,129	..	227	33,207	1,41,563	
1911-12	44,547	31,628	76,163	81,225	9,477	14,497	1,31,482	..	1,32,731	1,32,731	..	306	43,445	1,31,482	
1912-13	50,060	38,916	88,976	78,724	9,518	15,117	1,32,393	700	1,23,745	1,24,445	..	233	67,665	1,32,393	
1913-14	50,060	39,258	89,318	52,801	10,807	16,956	1,69,882	10,084	1,10,015	1,30,099	2,042	269	37,472	1,69,882	
1914-15	51,976	40,084	92,060	51,025	9,513	17,671	1,70,379	23,996	1,08,807	1,32,803	3,025	245	34,245	1,70,369	
1915-16	52,914	41,321	94,235	45,319	11,431	18,553	1,69,538	44,823	85,358	1,30,187	3,196	235	35,290	1,69,538	
1916-17	52,914	40,345	93,259	31,920	13,892	19,219	1,58,290	29,132	71,023	1,00,155	3,103	17,005	33,207	1,58,290	
1917-18	52,914	41,478	94,392	46,051	7,495	19,738	1,67,476	40,521	84,196	1,24,717	3,150	274	45,597	1,73,738	

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APPENDIX XIII (Table No. 2).

Statement showing the financial position of the Agricultural Banks for the year 1917-18.

No.	Item.	Songhad Bank.		Vyara Bank.		Bhadran Bank.		Amreli Bank.		Total.	
		1916-17.	1917-18.	1916-17.	1917-18.	1916-17.	1917-18.	1916-17.	1917-18.	1916-17.	1917-18.
1	2	3	4	5	6	7	8	9	10	11	12
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1	Nominal Capital	12,500	12,500	14,190	14,190	1,00,000	1,00,000	50,000	50,000	1,76,690	1,76,690
2	Paid-up Capital—										
	(a) State	6,250	6,250	6,250	6,250	21,664	21,664	18,750	18,750	52,014	52,014
	(b) Private	4,580	4,580	7,940	7,940	21,921	22,223	5,708	6,555	40,129	41,278
3	Deposits at the end of the year	1,889	3	7,359	9,558	12,366	18,353	10,311	18,137	31,925	46,051
4	Reserve Fund	9,186	9,321	7,831	7,930	1,482	1,482	854	1,006	19,353	19,739
5	Surplus Fund	1,166	2,352	508	420	1,723	1,741	2,828	2,982	6,225	5,395
6	Net profit	1,354	844	862	1,056	2,706	3,059	1,520	1,239	6,451	6,198
7	Loans reserved by the Banks	10,419	4,432	13,742	7,963	48,311	39,517	10,239	8,875	82,711	60,787
8	Loans outstanding at the end of the year—										
	(a) Co-operative Societies	1,727	1,647	249	5,203	20,536	20,717	6,621	13,554	28,133	41,121
	(b) Individual Khatedars	17,041	14,169	11,311	14,520	24,686	41,022	17,241	14,485	70,279	84,196
9	Cash and other investment	6,345	7,516	19,241	13,388	16,838	7,071	16,311	20,816	58,735	48,791
10	Total outstanding (8) and (9)	25,113	23,332	30,801	33,110	62,059	68,810	40,172	48,855	1,58,145	1,74,107

APPENDIX XIV.

Number, membership and financial position of agricultural Co-operative Societies for the last five years.

Year	Number of Societies.	Loans and deposits of members and non-members.	Loans from Government.	Loans from Banks.	Share Capital.	Reserve.	Remarks.
1	2	3	4	5	6	7	8
		Rs.	Rs.	Rs.	Rs.	Rs.	
1913—14	246	45,885	1,84,568	1,12,736	40,668	43,220	
1914—15	286	77,386	1,79,850	1,33,990	42,682	66,977	
1915—16	295	1,07,405	1,71,243	1,58,511	40,120	93,587	
1916—17	296	1,59,213	1,55,887	1,95,748	41,468	11,26,807	
1917—18	320	2,48,817	1,16,684	3,01,392	39,370	1,48,282	

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APPENDIX XV.

Classification of Documents received for Registration under different heads from 1905—06 to 1916—17.

No.	Year.	No.	Sales.		Mortgage with possession.			Mortgage without possession.			Compulsory money bonds above Rs. 1,000.		Optional money bonds below Rs. 1,000.		Remarks.
			Price.	Price for per deed.	No.	Price.	Price for per deed.	No.	Price.	Price for per deed.	No.	Price.	No.	Price.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
			Rs.	Rs.		Rs.	Rs.		Rs.	Rs.		Rs.		Rs.	
1	1905-06	6,843	23,49,187	343	11,113	36,47,017	328	1,888	6,16,017	325	40	..	102	1,29,849	
2	1906-07	8,333	28,65,017	343	11,979	40,20,180	335	1,938	7,17,321	370	30	..	80	1,18,172	
3	1907-08	10,435	35,52,918	340	12,590	42,56,627	338	2,038	8,24,846	404	39	..	89	1,83,410	
4	1908-09	15,906	49,35,114	310	15,309	47,41,178	307	2,114	8,06,883	381	48	..	98	1,38,180	
5	1909-10	14,394	44,06,481	312	11,796	36,72,402	311	1,626	6,85,048	421	36	..	80	70,560	
6	1910-11	16,284	52,82,678	324	12,886	40,59,836	315	2,436	8,94,734	367	129	..	88	1,85,281	
7	1911-12	14,186	48,54,304	342	14,195	42,12,611	297	2,661	10,17,722	382	19	..	83	61,791	
8	1912-13	16,189	59,24,536	354	15,803	50,96,766	323	2,346	10,98,300	468	28	..	82	1,05,724	
9	1913-14	19,214	70,45,967	367	16,346	60,13,571	367	2,345	11,79,221	503	39	..	81	1,23,660	
10	1914-15	17,740	61,52,805	346	16,180	52,07,651	322	2,637	11,29,410	428	30	..	93	1,60,437	
11	1915-16	18,992	67,84,984	356	15,513	52,29,663	337	2,654	12,67,374	478	38	..	79	1,93,210	
12	1916-17	23,854	91,29,144	383	16,350	59,84,504	366	2,504	13,68,110	546	46	..	93	1,99,661	
	Total ..	1,82,370	6,33,58,135	4,120	1,70,150	5,61,42,568	3,946	27,187	1,16,04,986	5,073	522	..	1,049	16,69,935	

APPENDIX XVI.

Chautauqua Institution.

In August 1874, Lewis Miller, of Akron, O., and Bishop John H. Vincent organised the first Chautauqua Institution. Its name was derived from Chautauqua Lake in New York State, on the shore of which the meeting was held. It began as a summer school for the better training of Bible teachers, and endeavoured to lay most emphasis on the "week-day forces" in religious culture. Its two founders desired to give Sunday-school teachers a continued, progressive and thorough study of biblical literature and pedagogical principles. The first meeting was a success; and by a gradual and natural growth the plan has been broadened to include instruction in almost all branches of knowledge; the session has been extended from two weeks to two months (July and August); and a town has been built up which presents an interesting study to the educator and sociologist in its municipal government and its ideals of life. All the essential features of the institution were adopted by 1878, the various important changes and addition have promoted its consistent development from year to year. It is at present incorporated as Chautauqua Institution under the laws of the State of New York. Its management is entrusted to a board of twenty-four trustees elected either by the owners of property at Chautauqua, or in case a quorum of such electors cannot be secured, by the board itself. The Institution is not a stock company, nor are the trustees interested in the land beyond the ownership of lots for private use. By the provisions of the charter, all surplus funds must be used for the improvements and extension of the Institution's work. The president and chancellor never received compensation for their services. Those officers upon whom falls the management of details are paid ordinary salaries.

Chautauqua has become a city where municipal functions are extended to include free public instruction and entertainment. This expense is defrayed by a system of taxation which falls upon all within the town, however, brief the term of citizenship. The tariff is one day, 40 cents; one week \$1.75; two weeks, \$2.80; four weeks, \$4; season, \$6. Citizenship includes the privilege of attending all exercises of the general program, and access to the museum, the reading-room, the models, etc.

The educational activities of Chautauqua Institution include the work done in connection with the Summer Assembly and the all-year-round instruction offered by the Chautauqua Library and Scientific Circle, and described hereafter.

The Summer work of the assembly falls under two general heads: the Summer Schools and the General Program. The Summer Schools are thirteen in number, and in 1905 enrolled a total of over 2,300 students who were registered in nearly 5,000 courses. These schools may be described as including six academic departments and seven professional departments. Under the first head fall English language and literature, modern languages, classical languages, mathematics and science, psychology and pedagogy, and religious teaching. Under the second are included library training, domestic science, music, arts and crafts, expression, physical education, and practical arts.

The faculty of the Summer Schools is in a measure as permanent as that of any college, the majority of the ninety members returning from year to year. A census of the last faculty shows representatives from Yale, Princeton, Columbia, Cornell, Michigan, and Chicago Universities; from Amherst, Haverford, Bowdoin, and Rockford colleges; from Buffalo, New York, and West Chester, (pa) normal Schools; and from a large number of other educational institutions.

The second division of the Summer work—the General Program—offers a regular and systematic series of religious and secular lectures, entertainments and concerts, extending over sixty days. Under the head of lectures those which are most genuinely educational in their nature are a large number of lecture series on subjects of literary, historical, scientific, and pedagogic interest. In addition to these series many single addresses by persons of note are interspersed throughout the program. While the series are most often presented by educators, the single addresses are more frequently from men of affairs. During the history of the institution, three Presidents of the United States, twelve or fifteen governors, thirty or more college presidents, and a long list of United States congressmen, distinguished jurists, and leaders in the world of commerce and civics have addressed Chautauqua audiences.

The musical features of the General Program have assumed significant proportions as the institution has developed. At present a chorus which at the height of the season numbers 500 or more, in conjunction with a regular orchestra of twenty pieces and with different groups of well-known vocal soloists, present during the season not only a large number of miscellaneous concerts, but at least three well-known opera soores, three great oratories, and three or four of the best-known masses. Thus an opportunity is provided for people, who ordinarily hear little of the best music; and the musical feature of the Summer becomes distinctly educational. It is estimated that, through all of these means, over 50,000 people are reached each Summer at Chautauqua itself.

One of the most important departments of the institution is the Chautauqua Literary and Scientific Circle. This was started in 1873, and offers aid to self-educating people, either as indivi-

duals or in groups known as "local circles." The essential features of the plan are:—

1. *A definite four years' course* of history, literature, science, etc.
2. *Specified volumes* approved by the counsellors.
3. *Allotment of time.* Reading apportioned by week and month.
4. *A monthly magazine* with additional readings, notes and general literature.
5. *A membership book*, with suggestions, review, outlines, etc.
6. *Time required*, forty minutes to an hour a day for nine months.
7. *Certificates* granted to all who complete the four years' course.
8. *Advanced courses*, for continued reading in special lines.
9. *Pedagogic course*, for secular teaching.
10. *Young People's Reading Course* to stimulate the reading of good literature by the young.

APPENDIX XVII.

Department of Commerce and Industry, Baroda State, Baroda.

The following Rules, called "Rules for the Development of Commerce and Industry in the Baroda State," were sanctioned by His Highness the Maharaja Sir Sayajirao Gaekwad, Sena-Khas-Khel, Samsher Bahadur, G.C.S.I., Ferzande-Khas-I-Daulat-I-Inglishia, on the 2nd April, 1915, and are published for the information of the public.

Baroda,
12th April, 1915.

MANILAL B. NANAVATI,
Director of Commerce.

Rules for the Development of Commerce and Industry in the Baroda State.

CHAPTER I.

Preliminary.

1. Whereas it is found desirable to lay down a definite State Policy for the development of Commerce and Industries in the State and to have a regular procedure to deal with the applications for State help and to decide them expeditiously, the following rules are laid down for the guidance of the State, its officers and subjects and for the information of the public.

2. These rules may be called "Rules for the Development of Commerce and Industries in the Baroda State."

3. They shall come into force from 1st May, 1915.

4. Rules, Circulars, Orders and Notifications published before these rules come into force, shall be repealed so far as they are contrary to the provisions of these rules. But nothing herein contained shall cancel or modify any concessions, general or specific, granted to Industrial concerns or enterprises before these rules come into force.

5. In these rules, unless there is anything repugnant in the subject or context, (1) "Director of Commerce" includes any officer who is invested by the Huzur from time to time with the functions and powers of Director of Commerce, (2) "Factory" means any Industrial establishment employing regularly not less than fifteen workmen for the production of industrial articles by the aid of machinery or other apparatus and requiring a division of labour suitable to a production *en masse*.

A Factory shall be deemed to be fitted with the "latest appliances of mechanical art" if the machinery and equipment used is fairly representative of the latest development in the particular industry abroad.

CHAPTER II.

Organisation of the Department of Commerce and Industry.

6. A Department of Commerce and Industry will be organised for which a Director of Commerce and Industry may be appointed. The functions of the Department shall be as under:—

- (a) To study the industrial and commercial conditions of the State and to advise Government to take such measures as may be found necessary and advisable.
- (b) To conduct industrial experiments and to give demonstrations of successful experiments.
- (c) To advise manufacturers, merchants and artisans in the development of trade and industry in the State.
- (d) To advise Government on measures that affect commerce and industry of the State.
- (e) To assist the people in the organisation of trade, commerce and industries.
- (f) To investigate and recommend applications for State Concessions to His Highness' Government.
- (g) And to do all other duties as may from time to time be entrusted by His Highness' Government.

7. With the previous sanction of the Government, the Director of Commerce may employ experts in different lines such as Textile, Mechanical Engineering and Chemical Industries, etc., and demonstrators in various industries. The advice and assistance of this staff shall always be available to the public free of charge unless otherwise provided; this assistance may include the preparation of plans and estimates, preliminary investigations of raw materials and markets, etc.

8. With the object of carrying out the State Policy for the development of Commerce and Industry as mentioned in Section 6, the following special measures may be taken as occasions permit:—

- (a) So far as may be possible, all Government Stores will be purchased from local manufacturers.
- (b) Investigation of industries that might be introduced in the State, shall be made from time to time. Surveys of industrial towns and of the existing Industries—hand and power—shall also be made. Information thus collected will be published for the information of the public.

- (c) Experts may be employed and experimental works opened, if deemed necessary, to demonstrate the feasibility of industries new to India. Such experimental works will be transferred to private parties at the earliest possible opportunity.
- (d) Scholarships may be given to students of proved capacity and fitness for the purpose of studying industries abroad or in distant parts of India, that can be introduced in this State.
- (e) Warehouses may be constructed at State expense in important centres of trade for the purpose of storing dutiable articles under bond. No such Warehouse may be constructed except where the rental returns would justify the expenditure.
- (f) A permanent Industrial Museum may be organised for the exhibition of the mineral and forest and agricultural products of the State, and of industrial and agricultural appliances.
- (g) A Commercial Intelligence Bureau may be maintained by the State for the dissemination of industrial and commercial information.
- (h) Specimens of Baroda Arts and Craft may be sent at State expense from time to time to Exhibitions abroad or in other parts of India.
- (i) Exhibitions may be organised at suitable places at reasonable intervals in the State.
- (j) A Bureau of Industrial and Commercial Statistics may be opened in the Department of Commerce and Industry.
- (k) Demonstration Classes may be opened in Industrial Centres to show to the people the successful experiments made by the State Experts in Industry.

9. In addition to the measures mentioned in Section 8, an Advisory Committee may be appointed for the investigation and discussion of the economic problems of the State. Its objects and constitution will be as under:—

- I. The Committee shall discuss all the economic questions of the State except the land revenue and such other policy, as may from time to time be settled by the State.
- II. Unless otherwise ordered by the Huzur, it shall consist of the following members:—
 - 1. President—to be selected by His Highness' Government.
 - 4. Subas—of all Districts.
 - 1. Director of Commerce and Industries.
 - 1. Director of Agriculture.
 - 1. Conservator of Forests.
 - 1. Principal of the Kala-bhavan.

1. Representative of the Baroda Chamber of Commerce.
 8. Representatives—2 from each District, one representing Agriculture and the other Commerce and Industry—to be selected by the District Boards.
 4. Officers—nominated by Government.
- III. The Committee shall meet at the beginning of every year and determine the programme of its work. It shall meet then as often as necessary.
 - IV. The Committee may appoint Sub-Committees for the investigation of different subjects.
 - V. All resolutions passed by the Committee shall be sent to the Departments concerned. The Departments shall submit the proposals to Government and communicate to the Committee the orders passed by Government thereon.
 - VI. In order to carry out investigations, Government may grant a sum of money to be spent by the Committee for which the Director of Commerce shall obtain the sanction of the Huzur from time to time.
 - VII. The Committee shall submit to the Huzur an Annual Report of their work.
 - VIII. The Committee may obtain through their President such information from the various Departments of the State as is likely to help them in their deliberations. All the Departments shall supply the information unless they have special reasons to withhold.

CHAPTER III.

Concessions.

(A). Procedure in regard to Applications for Concessions.

10. All those who desire to enjoy State concessions defined in Section 15 of this Chapter, shall, in order to receive the same, send in a petition to the Director of Commerce on a stamp of the value of Rupees five.

11. A petition may be presented either:—

- (a) For a preliminary guarantee of concessions, or
- (b) For the definitive granting of the same, or
- (c) For prolongation of concessions enjoyed after the latter have become inoperative.

(a) Preliminary guarantee may be given in the case of factories or industrial establishments, the creation of which is contemplated. This guarantee may be given only when proofs are given of the substantial financial backing of the enterprise. Concessions thus guaranteed will become inoperative if the enterprise does not commence operations within two years from the date of the Huzur. Order sanctioning such guarantee (but a new petition may be made when the definitive granting of the concessions already guaranteed is required).

(b) The definitive granting of concessions may be petitioned for at any time within two years of the day on which the industrial establishment that may benefit thereby commences work; beyond that period the granting of concessions may not be petitioned for, except in special cases.

(c) A petition may be presented for the prolongation of concessions enjoyed at any time within six months previous to the termination of the concessions; but any such petition presented later than six months after the date on which the said concessions become inoperative, shall not be considered.

12. Petitions presented with a view to obtaining State favours shall contain:—

I. In the case of factories and industrial concerns:—

- 1. A detailed enumeration of the articles produced or the production of which is contemplated by the industrial establishment in question.

2. A description of the process employed or to be employed sufficient to enable Experts to form a judgment.
 3. The number of workmen employed or to be employed in the establishment.
 4. The amount of Capital invested or to be invested in the site and buildings, the machinery and equipment of the establishment.
 5. An approximate estimate of the quantity and value of the annual output.
 6. An enumeration of the more important implements of production (*e.g.*, in the case of Spinning Mills, the number of spindles; in the case of Weaving Mills, the number of looms) with a view to facilitating an estimate of the productive capacity.
 7. The place where the factory is opened or is to be opened and registered in case of limited liability company.
 8. Raw materials used or to be used; and whether they can be had within the State.
 9. Liability of the company, limited or unlimited; its capital, nominal and paid-up.
 10. Names of the Agents or Managers of the company.
 11. Should the petitioner desire to complete the construction of the Factory by degrees, though by a stipulated date, the petition shall contain all the above data not only for the first year, but also for those succeeding.
 12. Two copies of Prospectus and of Memorandum and Articles of Association, if it is a Registered Company, and a copy of the Agreement with the Agents or Managers. (Form 1.)
- II. In the case of commercial and other concerns, the information required in Sub-Sections 7, 9, 10, 12 and such other particulars as may enable His Highness' Government to get a clear idea of the object of the undertaking shall be given. (Form 2).
13. On the receipt of the application, the Director of Commerce shall make such preliminary inquiry to verify the facts mentioned therein, as he may deem necessary.

(B). To whom Concessions may be granted.

14. State Concessions may be granted to the following enterprises:—
- (a) To manufacturing enterprises (factories) equipped with the latest appliances of technical art, which produce articles not hitherto produced at all by manu-

facturers in the Baroda State, or which produce articles, the increased supply of which is desirable from economic point of view, or which may assist the development of the natural resources of the State.

- (b) To non-Government workshops (or technical schools).
- (c) To companies organised for the regular employment of a large number of workmen engaged in domestic industry.
- (d) Industrial and Agricultural Co-operations, provided the same are engaged in the production of articles falling within the scope of clause (a).
- (e) Ship-building works or ship-yards as well as repairing yards, equipped with modern appliances.
- (f) To Mining Companies.
- (g) To enterprises and concerns of general or public utility, *e.g.*, tramways, electric works, gas companies, irrigation companies, etc.
- (h) To enterprises organised for the development of pearl oysters, shells, or other fisheries equipped with modern appliances.
- (i) To refineries of spirit or other enterprises for finishing partially manufactured products, *e.g.*, jaggery, crude oils, country tanned leather.
- (j) To chemical and pharmaceutical works.
- (k) To hand and art industries, such as hand-loom weaving, ivory and wood-carving, dyeing and printing, etc.
- (l) To banks, warehousing companies, building associations.
- (m) To commercial schools and industrial exhibitions, or
- (n) To any other enterprise, which, to Government, appears worth encouraging.

In the granting of concessions as far as possible, the Baroda State subjects shall get preference. Such industries as lead to the development of the natural resources of the State, will, also, get preference.

Only those industrial and commercial institutions that are situated in the Baroda State, shall get State help.

(C). Concessions.

15. To the commercial and industrial concerns mentioned in Section 14, one or more of the following concessions may be granted by the State to wit,

- (a) Exemption from the payment of direct (State) taxes due on the output or the earning of the factory, other than cotton excise or other direct taxes imposed by treaty obligations.

- (b) Exemption of shares and deposits from attachment by Revenue authorities except through the Civil Courts by due process of law.
- (c) Free, or at cost price, or at low rates the supply of raw materials owned by the State, including the waters and forests of the State.
- (d) To have built by the Railway Department or by the lessees of State Railways sidings or Industrial Railway Lines required by manufacturing, forestry and mining enterprise, the cost thereof to be charged to the Enterprises concerned.
- (e) Payment of subsidies or bonuses or subventions, for a period of years, to any enterprise not previously developed in Baroda or round about.
- (f) Exemption from customs or octroi duties, total or partial, on:—
 - (a) Building materials.
 - (b) Raw materials including fuel.
 - (c) Half finished materials that require finishing in such factories.
- (g) Exemption from export duties on finished or semi-finished articles manufactured in the State.
- (h) Granting of monopolies in special cases where open competition is not possible or desirable.
- (i) Acquisition of suitable sites for factories, drains and other similar purposes. These sites may be:—
 1. Non-occupied Government land. Such lands may be granted free of rent for a term of years in special cases.
 2. Occupied Government land. In case of such lands acquired by Government, compensation shall be paid under the Land Acquisition Act by the concessionaries.
- (j) Making roads and railways to facilitate transportation between existing Railway Stations and Factories.
- (k) Supplying water from Government Water Works at moderate rates, say annas 2 per 1,000 gallons when available, and laying out water pipes at State cost up to the nearest public roads.
- (l) Grants of machinery or tools in case of small trades or art crafts free or at a nominal rental or at reduced prices.
- (m) Loan of money at a reasonable rate of interest.
- (n) Lending the services of State Experts without any charge.
- (o) Preferential right to supply Government Stores, or,

(p) Any other concession suitable to particular industries.

16. A. With respect to loans to be made to Industrial Concerns, as mentioned in Section 15, Sub-Section (m), the following rules shall apply subject to modification in individual cases if found advisable or necessary:—

- I. That Mills and Factories organised as Joint-Stock Concerns and registered under the Baroda Company's Act, will be helped.
- II. Preference will be given to such industries as may secure a direct return as in the shape of Excise Revenues or may help the development of the natural industrial resources of the State.
- III. That a sum upto one-third the amount to be invested in buildings and machinery and other fixtures, will be lent by the State, the rest to be raised by means of Shares by the Promoters.
- IV. The concern will issue Debentures for the amount to be lent by the State. The period for the Debentures to be ten years.
- V. The State shall charge 5 per cent. or more as the case may be.
- VI. The State will not supply any Working Capital except in a special case when money may be advanced against Liquid Assets of the Concern, keeping a safe margin.
- VII. The Accounts of the Concern that receives a loan from the State, will be audited by competent Auditors and that the State may appoint their own Auditors besides, for which no charge will be made.
- VIII. The State shall have a right to appoint a Director on the Board of the Concern so helped.

B. In the case of Non-Industrial Concerns, loans may be made on such terms and conditions as may be found necessary or advisable on their individual merits.

C. The Director of Commerce shall ascertain from time to time on reference to the Huzur, the amount of money available for such purposes.

(D). Conditions of Concessions.

17. 1. The Concern receiving Concessions from the State shall appoint competent Auditors to audit its accounts.
2. The Government shall have a right to appoint their own Auditors to audit accounts of the Concern for which no fees shall be charged.
3. In special cases the Government shall have a right to nominate their own Director on the Board of the Concern.

4. The appointment of State Auditors and Directors shall be stipulated for at the time when State Concessions are asked for and granted.

18. The Director of Commerce may, if deemed necessary, require the deposit of Caution Money for the proper fulfilment of conditions of the Concessions granted.

19. A. All Concerns that receive State help shall employ as far as possible workmen and officials domiciled in the Baroda State.

B. Factories and Industrial Establishments enjoying Concessions from the State, shall procure as far as possible all the articles for buildings and equipment as well as the materials and half-finished products required in working from home industry and produce, provided such are made or produced in the required form in the Baroda State.

C. The conditions mentioned above shall be stipulated at the time when the preliminary guarantee or definitive granting of Concessions takes place in the Huzur Order relating thereto.

20. The Factories and Industrial Enterprises receiving State Concessions shall send to the Director of Commerce and Industry a half-yearly Report, (1st) within 15th August and (2nd) within 15th of January covering,

- (1) Profit and Loss during the half year,
- (2) A detailed Report regarding the production and the output of Concern.
- (3) Alterations in plant and equipment, if any.

21. The Concern shall also send a copy of its Annual Balance Sheet when issued. The State shall have in case of doubt every right to have the correctness of the data verified by Company's Books.

(E). Cancellation of Concessions.

22. All the Concessions granted by the State shall be cancelled when,

- (a) The Concessionaries fail to comply with any one of the conditions stipulated in the grant.
- (b) When the concern ceases to work continuously for two years. In the case (a), the Concessions shall abate wholly or in part, as the case may be; in the case (b), the Director of Commerce with the previous sanction of the Minister, may, on the application of the concern and for valid reasons shown, permit the continuance of the Concessions.
- (c) The cancellation of Concessions may be published in the "Adnya Patrika," unless there are special reasons for not doing so.

(F) Administrative Arrangements

23. Questions relating to the granting of Concessions, the date when they shall come into force and the period during which they shall remain in force, shall be decided by the Huzur on the recommendation of the Director of Commerce and Industry. But all questions regarding the financial help (assistance) to Industrial and Commercial Institutions shall be first submitted to a Committee on Commerce which shall consist of

1. The Legal Remembrancer,
2. The Accountant-General, and
3. The Director of Commerce and Industry.

The Committee shall investigate all the details and formulate their proposals and submit them to the Government for final orders.

24. If for any purpose, it is found necessary that the factory should be inspected before any Concession is granted, the Director of Commerce may ask, by a written order, the Executive Engineer of the District and the Boiler Inspector to inspect the Factory and make a joint-report in the matter.

25. The Director of Commerce may also when necessary, with the previous sanction of the Minister, call any Officer in the State to help him to decide any application for Concessions or employ experts to advise him, at the cost of the Department of Commerce.

26. All contracts entered into between Concessionaries and the State shall be executed by the Director of Commerce on behalf of the State after approval of the draft by the Legal Remembrancer.

27. The concessions granted to Factories shall be published in the "Adnya Patrika" from time to time, except in such cases as the Director of Commerce may deem it undesirable to do so.

CHAPTER IV

Miscellaneous.

28. The Director of Commerce shall prepare a programme of his work at the beginning of each Official year and have it approved by Government.

He shall also prepare an Annual Report on the working of the Department and submit to Government.

29. The Director of Commerce and Industry shall keep a register of Concessions granted by the State and have them published in a book-form from time to time.

MANILAL B. NANAVATI,
Director of Commerce and Industry,
Baroda State.