



Report of the Provincial Industries Committee, Bombay



BOMBAY

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REPORT OF THE PROVINCIAL INDUSTRIES COMMITTEE.

CONTENTS.

	Page
1. <i>Appointed</i> Bombay by the Policy Committee	1
The Committee consisted OF SOME ASPECTS OF THE SUB-COMMITTEE REPORTS ...	3
1. Adviser to the Industries Sub-Committee ...	3
2. Adviser to sub-Committee ...	4
3. Adviser Industries Sub-Committee ...	5
4. Industries Sub-Committee ...	5
Miscellaneous Industries Sub-Committee ...	6
Cottage and Small-scale Industries Sub-Committee ...	7
Special Sub-Committee on Location ...	7
General ...	7

CHAPTER III—GENERAL PRINCIPLES OF INDUSTRIAL POLICY—

(1) To recommend existing industries in the Province which should be further expanded and new industries which should be started during the post-war period ...	8
Over-all Targets ...	8
Priorities ...	8
(2) To recommend such industries as can best be organised as (1) Large-scale industries, (2) small-scale or cottage industries ...	9
(3) To suggest the most suitable sites for the location of the various industries after taking into consideration the availability of labour, water supply, electric power, raw materials, markets, and the desirability of preventing congestion in thickly populated areas ...	10
(4) To advise whether the industries recommended should be promoted by Government or private agency, and in the latter case whether Government should participate and if so the nature of the help which would be required ...	11
I—Scope of State enterprise ...	11
A—Defence Industries ...	12
B—Basic and Key Industries ...	12
C—Public Utilities ...	14
D—Other Industries ...	15
E—Problems arising from direct control of Industry ; ...	15
(i) Management ...	15
(ii) Compensation ...	15
(iii) Division of Central and Provincial Spheres of Ownership ...	15

CHAPTER III—*contd.*

S

II—The Advisability of Government Participation in Private Industry

Forms of Assistance	..	..	...	...
Pilot Plants	..	—	...	...
Industrial Finance	...	...	...	...
Other Forms of Assistance	...	...	...	...
(5) To advise Government in regard to Panels to be set up for consisting of persons specially interested in such in- dustrialists, and technical experts	..	..	...	...
(6) Foreign capital	...	...	..	...
CHAPTER IV—CONCLUSION	...	...	..	...	..
APPENDICES —A—Names of the Members of the Sub-Committees	...	...	..	...	..
B—Questionnaire issued by the Provincial Industries Committee	...	...	..	...	..
C—Summaries of the Main Recommendations of the Sub-Committees	...	...	..	...	..
(I) Summary of the main recommendations of the Metals and Engineering Industries Sub-Committee	...	...	..	...	39
(II) Summary of the main recommendations of the Chemical Industries Sub-Committee	...	...	..	...	53
(III) Summary of the main recommendations of the Food and Forest Industries Sub-Committee	...	...	..	...	63
(IV) Summary of the main recommendations of the Textile Industries Sub-Committee	...	...	..	...	69
(V) Summary of the main recommendations of the Miscellaneous Industries Sub-Committee	...	...	..	...	73
(VI) Summary of the main recommendations of the Cottage and Small Scale Industries Sub-Committee	...	...	..	...	77
(VII) Summary of the main recommendations of the Special Sub- Committee	...	...	..	...	86
D—Map of the Province of Bombay showing location of new industries	...	...	..	...	at the end

REPORT OF THE PROVINCIAL INDUSTRIES COMMITTEE BOMBAY.

CHAPTER I.

INTRODUCTION.

1. *Appointment.*—This Committee was appointed by the Government of Bombay by their Resolution No. 5393/33, dated 13th June 1945, on the lines of the Policy Committee for Industries appointed by the Government of India.

The Committee consisted of the following members :—

- ✓1. Adviser to the Governor of Bombay in charge of Industries (Chairman)
2. Adviser to the Governor of Bombay (Home).
3. Adviser to the Governor of Bombay (Revenue).
4. L. M. Nadkarni, Esqr., I.C.S., Deputy Secretary to Government, Revenue Department.
5. Director of Industries, Member and Secretary.
6. Electrical Commissioner with the Government of Bombay.
7. Commissioner of Labour.
8. N. D. Sahukar, Esqr., B.A.
9. A. W. Percy, Esqr.
10. M. A. Master, Esqr., M.A., LL.B.
11. Neville N. Wadia, Esqr.
12. Cassamally Munjee, Esqr., J.P.
13. N. M. Joshi, Esqr., B.A., M.L.A. (Central).
14. The Director of Resettlement and Employment.
15. Adviser to the Governor of Bombay (Finance).*

✓2. *Terms of Reference.*—The terms of reference to the Committee were as follows :—

(1) To recommend existing industries in the Province which should be further expanded and new industries which should be started during the post-war period.

(2) To recommend such industries as can best be organised as (1) large-scale industries and (2) small-scale or cottage industries.

(3) To suggest the most suitable sites for the location of the various industries after taking into consideration the availability of labour, water supply, electric power, raw materials, markets, and the desirability of preventing congestion in thickly populated areas.

(4) To advise whether the industries recommended should be promoted by Government or private agency; and in the latter case whether Government should participate and if so the nature of the help which would be required.

(5) To advise Government in regard to panels to be set up for particular industries, consisting of persons specially interested in such industry, such as businessmen, industrialists, and technical experts.

✓3. *Reconstitution.*—The Committee was re-constituted by Government by their subsequent Resolution No. 5393/33, dated 9th May 1946 as follows :—

- ✓1. The Minister in-charge of Industries, Chairman.
2. The Minister in-charge of Health.

*Appointed by G. R., G. D., No. 5393/33, dated 13th December 1945.

3. The Minister in-charge of Labour.
4. The Minister in-charge of Agriculture.
5. The Minister in-charge of Reconstruction.
6. The Minister in-charge of Village Industries.
7. L. M. Nadkarni, Esqr., I.C.S., Deputy Secretary to Government, Revenue Department.
8. Director of Industries, Member and Secretary.
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16. N. M. Joshi, Esqr., B.A., M.L.A. (Central).
17. The Director of Resettlement and Employment.
18. The Director of Labour Administration.*

4. *Constitution of Sub-Committees.*—The first meeting of the Provincial Industries Committee was held in Bombay on 19th July 1945 when Mr. I. H. Taunton, C.I.E., I.C.S., Adviser to the Governor was in the chair. As a result of discussion, the members came to the conclusion that in order to give effect to the terms of reference of the Committee, it would be necessary to appoint Sub-Committees for carrying out a rapid survey of different groups of industries and for investigating their position so as to determine the steps which might be recommended for industrial development of the Province. The following seven Sub-Committees were thereupon constituted :—

- 1 (1) Metals and Engineering Industries.
- 1 (2) Chemical Industries.
- 1 (3) Food and Forest Industries.
- 1 (4) Textile Industries.
- 1 (5) Miscellaneous Industries.
- 1 (6) Cottage and Small-scale Industries.
- 1 (7) A special Sub-Committee to consider the location of Industries.

These Sub-Committees were authorised to co-opt as members, Industrialists and Experts if and when necessary. The names of the members of the Sub-Committees as finally constituted are given in Appendix A.

5. *Staff.*—The following staff of the Provincial Industries Committee and the seven Sub-Committees was sanctioned.

Committee.

- 1 Special Officer.
- 3 Heads of Branches.
- 3 Senior Clerks.
- 6 Junior Clerks.
- 1 Stenographer.
- 3 Typists.
- 3 Peons.

Sub-Committees.

- 7 Secretaries of Sub-Committees.
- 8 Senior Assistants.
- 15 Junior Assistants.
- 8 Clerks.
- 7 Steno-typists.
- 8 Typists.
- 15 Peons.
- 16 Investigators and four District Industrial Officers were also put on Special Duty.

Instructions were also issued to all the Collectors of the Districts to see that all possible facilities were given to the investigators to collect the relevant information in their respective Districts.

The Committee issued a questionnaire as in Appendix B, to be filled by establishments coming under the Factories Act.

6. *Meetings.*—The reports of the Sub-Committees were considered by the Committee at its meetings held on 17th April and 12th, 13th, 22nd and 28th August 1947. It was decided that pending submission of the Report of the Committee, Government might be requested to publish the reports of the Sub-Committees and to make their copies available to Commercial and Industrial Associations and Chambers of Commerce and Industries. This recommendation has since been accepted by Government. Summaries of the main recommendations of the Sub-Committees Reports are given for ready reference in Appendix C.

✓7. *Report.*—The recommendations made by the Sub-Committees indicate the various lines in which each industry or group of industries requires development, the extent of such development, the methods by which such development can be secured and the concrete measures necessary for the industry itself or the Government to accomplish the same. It has not been possible for this Committee to go into all the detailed recommendations of each Sub-Committee and to specifically approve or disapprove them but it was considered sufficient to re-examine some aspects and record them in a brief review. There are other recommendations of the Sub-Committees relating to matters of Policy which raise certain fundamental issues. The Committee has thought fit to discuss these at length and to form its conclusions thereon under the various terms of reference prescribed for the Committee. We wish to point out that the recommendations of the Sub-Committees in this regard must necessarily be reviewed in the light of the conclusions reached by the Committee, so that, wherever the measures suggested by the Sub-Committees are not in complete conformity with the principles laid down by the Committee, they do not have the support of this Committee.

CHAPTER II.

A BRIEF REVIEW OF SOME ASPECTS OF THE SUB-COMMITTEE REPORTS.

(1) **Metals and Engineering Industries Sub-Committee.**—The Sub-Committee has drawn attention to the fact that this Province is deficient in the supply of basic minerals and ferrous and non-ferrous metals and has, therefore, emphasised the need for a comprehensive geological survey. Pending the discovery of substantial supplies of basic metals, the development of industries relating to metals and engineering will have to depend on the supply of steel from outside the Province or on such scrap as may be available in the Province.

With regard to steel, the Government of India have already proposed to set up two Iron and Steel Plants the exact location of which has not yet been settled. The setting up of remelting furnaces and rolling mills in this Province can be considered only after finding from a survey that sufficient scrap is available for the same in this Province. It will be further necessary to see that the scrap is properly graded and made available to the Steel Works. Bombay has obviously an advantage for purchasing shipping scrap. The question of starting "Utilisation Industries", industries which would utilise metal available from iron and steel factories and rolling mills, would arise only after a steady supply of this metal is assured.

The Committee has given special consideration to the question of agricultural implements and pumping plants for drawing water. The Province is in great need of such equipment and the Committee thinks that it is possible for certain Engineering firms to take up their manufacture at once.

An alternative to these would be wind-mill pumps which would incidentally save the need for electric power. Though there is absolutely no difficulty in this country for the manufacture of wind-mills, their operational success in the prevailing local conditions is doubtful. The chief difficulty in this respect appears to be the absence of a continuous gale. There is reported to be a good gale only during the monsoon on the coastal areas, but it is in the fair season and on non-coastal areas that the need for water supply by this method is really felt. The water on the coast is brackish and, therefore, of not much use. For sweet water, it may be necessary to go to a depth of about 200 feet in which case wind-mills are of little help. The possibility of setting up wind-mills in different parts of the Province, however, deserves to be investigated.

It is suggested in the Report of the Metals and Engineering Industries Sub-Committee that separate factories should be set up to manufacture containers which are at present manufactured by the Oil Companies themselves. The idea of the members of the Sub-Committee appears to be that the container industry was an essential industry during war-time. In view of the fact, however, that the Oil Companies do not make any profit on containers, the Committee feels that any scheme for promoting the manufacture of containers by private concerns would amount to subsidising the concerns at the expense mainly of the consumers of kerosene and petrol. It may also mean allowing a lot of valuable machinery of the existing Companies to remain idle.

✓(2) **Chemical Industries Sub-Committee.**—The Committee has given special attention to the question of setting up a Petroleum Refinery in the Province. The main difficulties in the way of development of such industry are two :—

- (1) Lack of indigenous supply of crude oil which is its raw material, and
- (2) Need for a heavy protective duty for a long time.

It is felt that the industry will rest on an entirely uncertain foundation and the levy of a protective duty will impose a burden on the vast majority of the population as consumers of petrol and kerosene. It will mean subsidising one firm at the expense of the community as a whole.

In view, however, of the importance of this industry for national defence and training of technical personnel, the Committee considers the establishment of a refinery as necessary. Such a refinery will have to be set up in proximity of a deep water jetty where large tankers could berth. A suitable site for this

purpose will have to be selected on the west coast subject to the consideration that a refinery very near the coast will naturally be an easy target from air or sea. The refinery, however, should not be situated in the heart of or near a heavily residential or business area, as crude oil is a dangerous material to process.

✓(3) **Food and Forest Industries Sub-Committee.**—The Sub-Committee has suggested expansion of the production of sugar in the Province and has recommended extension of the existing sugar factories in preference to establishment of new ones. Our Committee is, however, of opinion that new factories may not, as a general rule, be prevented from being set up but that wherever an existing sugar factory has sugar cane plantation in a contiguous area, it would be worth while allowing that factory to grow to its economic limit before permission is given for starting a new factory.

The scope for expansion of sugar production in this Province will increase beyond the limits recognised at present by the Government of India and the question of further development will have to be reconsidered when the irrigation programme of this Province is fairly under way and surplus land for the cultivation of sugar cane is made available.

The Committee acknowledges the need for a Central Distillery to manufacture Power Alcohol and Rectified Spirit from molasses, and agrees with the Special Sub-Committee on Location that the proper location for such a distillery is a place like Belapur which is situated near the sugar producing areas.

Regarding the question of developing fruit canning, as there is a large supply of mangoes in the Province, there does appear to be scope for the development of mango canning industry. At present, a part of the mango crop is unfortunately allowed to rot due presumably to lack of quick transport and refrigeration facilities. There is no doubt that the growth of canning industry would prevent this wastage. But, as such a development would also lead to making fruit more scarce in the rural areas, it does not deserve to be encouraged except where there are orchards producing fruit clearly in excess of the local requirements. If efforts are made to improve the transport situation, the development of fruit canning need not in our opinion be regarded as an urgent necessity.

✓(4) **Textile Industries Sub-Committee.**—The Sub-Committee has emphasised the need for further development of the industry in this Province. The advantages of technical knowledge, trained workers, availability of cotton and other facilities are so obvious in the case of this Province that its claim to a large share in the future development of industry appears to rest on a very sound basis.

The Sub-Committee has emphasised the need for the industry in this Province to go 'finer' and to develop the export market. In view of the large imports of finer varieties from England and Japan before the war, the industry in Bombay will no doubt do well to concentrate on the development of 'finer' cloth as a long term measure. But, in view of the acute shortage of cloth existing in the country itself, the Committee feels that immediate efforts should be made to increase production of coarse varieties so as to afford relief to the common man. For some time to come, the cotton textile industry will have to concentrate its efforts on satisfying the needs of the home market and on providing for essential exports.

Before the war, large quantities of cotton used to be exported from the country, mainly to Japan, and we imported in return large quantities of cloth. In our opinion, the development of this industry should be so pushed as to relieve the country of its dependence on foreign markets for the off-take of cotton and to avoid the necessity of having to pay for imports of cloth.

We are in complete agreement with the Sub-Committee in its plea for better organisation of the industry so that it may be in a position to lower its cost of production and raise the income of workers without demanding State assistance.

The Committee recognises that in the development of the cotton textile industry, immediate attention should be given to the expansion of spinning plants as there is at present an acute shortage of yarn. With regard to the question whether spinning plants will by themselves be economical to run, the Committee feels that though there is a tendency in normal times for spinning mills to operate in conjunction with weaving plants and though under present conditions profit made by spinning mills is less than what it could otherwise be made, the demand for yarn is so great that spinning mills could still make a fair profit.

As for the development of the Rayon industry, the question whether its development would not affect the fortunes of the cotton textile industry was discussed and it was felt that there was scope for the development of both industries in this Province, particularly, in view of the interdependence of these two industries in certain types of production.

The production of rayon on a large scale would require the utilisation of bamboo which also happens to be the raw material for paper. Here again, it was considered that in view of a large number of potential raw materials for both rayon and paper e.g. wood pulp, bagasse, cotton waste, it would be possible to develop both the paper and rayon industries in the Province.

✓(5) **Miscellaneous Industries Sub-Committee.**—The Sub-Committee has recommended that the export of raw hides and sheep-skins from India should be prohibited. The Government of India Panel has also made similar suggestions with regard to export. It is indeed regrettable that the raw produce of this Province should not be processed in this country and should be sent abroad and re-sold to us at a higher price. It is, however, doubtful whether the prohibition of such exports is the best way of relieving the situation. A better alternative appears to be to develop the finishing industry by improving Indian tanneries and running them on up-to-date lines so that the finished products may find a ready market in India.

The working conditions of labour in the tanneries in this Province are not at all conducive to efficient organisation of leather industry. There is, for example, an urgent necessity of shifting the tanneries from Dharavi to a place where the tanners can have not only adequate space for work but also suitable housing accommodation. The Committee understands that this problem is already engaging the attention of the Municipal Authorities. Without expressing any opinion on the suitability of alternative sites that may be under consideration of the Municipal Authorities, the Committee would like to stress the necessity for proper facilities of drainage, transport and housing accommodation in any of the areas that may finally be decided upon. Only then, will it be possible for the tanning industry to be organised on model lines. Government may, therefore, lay down certain rules and regulations for the maintenance of sanitary and hygienic conditions in such colony and round about.

✓ (6) **Cottage and small-scale Industries Sub-Committee.**—Though the report of this Sub-Committee is ostensibly concerned only with those industries which can be developed on a cottage or small basis, it is evident that in case of many industries a clear line of distinction cannot always be drawn, as the industry in question may admit of development on both large-scale and cottage basis. The important problem of dove-tailing cottage with large-scale industries therefore arises and is discussed by us in the following chapter.

The Committee would emphasise the need for fixing targets of production of cottage products for the period of 5 years in the first instance, by district organisations of cottage industries, so that there may be a competition and a sense of pride among these Bodies to produce the best results. A periodical census of production in each district would reveal the extent of the progress made in different parts of the Province.

A useful device for improving the quality of cottage products is the establishment of a Central Laboratory or a Bureau of Standardisation of Cottage Industry Products.

The Committee stresses the necessity for providing better means of communications so as to open more markets and provide ready sale of cottage industries products.

✓ (7) **Special Sub-Committee on Location.**—The Sub-Committee has reviewed the suggestions for location made by the other Sub-Committees and has, after taking into consideration various factors including the need for dispersal of industry, indicated alternative locations for industries to be developed in the Province. The Sub-Committee has naturally not been in a position to give any detailed reasons for selecting suitable places and expresses the necessity of further investigations in some cases.

The Committee considers that the outlined plan of locations submitted by the Sub-Committee provides a valuable guide for framing the location policy, though the Sub-Committee's recommendations do not refer to the manner in which the policy of the Government can be implemented. This question has been dealt with by this Committee in the following chapter.

✓ **General.**—The general data collected by the Sub-Committees provides a valuable basis for the formulation of industrial policy and the execution of a programme of planned development. It will, however, be necessary to keep the statistics contained in these reports up-to-date by setting up a suitable organisation for the purpose. Here we may mention that the Committee has felt an urgent need for setting up an organisation for collecting statistics in this Province on a more elaborate and co-ordinated basis than is being done at present. The work of the Sub-Committees was considerably handicapped for lack of adequate and reliable data. The need for taking a census of industrial production has been specially felt. The Committee was informed that under the Industrial Statistics Act, 1942, census of manufacturing industries (large scale) is already being taken. The Committee, however, recommends that a complete census of production of large as well as small and cottage scale industries should be taken every 3 to 5 years.

CHAPTER III.

✓ GENERAL PRINCIPLES OF INDUSTRIAL POLICY.

The Committee has paid special attention to the consideration of the general principles of Industrial Policy which should be adopted in this Province. These have been arranged under the various terms of reference of the Committee as shown below :—

(1) TO RECOMMEND EXISTING INDUSTRIES IN THE PROVINCE WHICH SHOULD BE FURTHER EXPANDED AND NEW INDUSTRIES WHICH SHOULD BE STARTED DURING THE POST-WAR PERIOD.

The Sub-Committees have already discussed in detail the various types of industries which should be started or developed in the Province. They have, in most cases, sub-divided important groups of industries and pointed out the precise scope of development in each branch. There are, however, two problems which the Sub-Committees have not specifically dealt with, viz., those of—

(1) Over-all Targets and

(2) Priorities.

Both these problems are admittedly vital to any planning as mere directional guidance does not go far enough.

Over-all Targets.—It will be noticed that there is no prescribed level of production for industries as a whole set up by the Sub-Committees and that they have preferred to fix certain targets on practical considerations, estimating the probable demand in each case in the next 5 or 10 years. In arriving at such estimates, the Sub-Committees have viewed the economy of the Province in the light of the conditions likely to prevail in the country as a whole. They have aimed primarily at securing a large measure of self-sufficiency for the Province in those lines where the economic factors are not unfavourable. But where other parts of the country are more favourably situated and are likely to meet the whole or a large portion of the total national demand, the targets indicated for this Province have been modified accordingly. In case of industries in the establishment of which this Province has a clear advantage, the needs of areas adjacent to this Province have also been taken into account in estimating the total demand.

The Sub-Committees have, in estimating the probable demand, revised the pre-war figures of consumption in the light of probable improvement in the standard of living. In the case of food and other essential industries the basic needs of the population have been taken into account and over-all long term targets set up. Such an approach towards demand does not make very clear the general order of increase to be brought about in industrial production as a whole. The Committee appreciates the value of setting up targets which easily convey the exact order of increase required in different directions as well as on the whole. The people in the Province would then know to what extent their average income would increase by the development of new and existing industries. This would not only have a large educative value for the public but may also serve to inspire national effort towards planned industrialisation. It would further indicate the extent of our achievements. As the Sub-Committees were, however, not instructed as to the general level of production which they should bear in mind in making their plans, our Committee was anxious to make at least a rough estimate of the net effect of the

proposals contained in the Sub-Committees' reports on industrial production on the whole. It is estimated that the capital required for an industrial expansion suggested by the Sub-Committees will approximately be Rs. 200 crores exclusive of expenditure on such items as housing, transport, supply of water, power, etc. The value of production will approximately be Rs. 150 crores per year.

Priorities.—We have examined the problem of laying down an order of priority in which the different industries should be developed in this Province. It may appear at first that the extent of industrialisation carried out so far is so small and the corresponding scope for development so large that Government may not be well advised to draw any schedule of priorities but, subject perhaps to the postponement of certain clearly non-essential industries, it should promote the growth of all others. Such a view, however, would fail to give any precise direction to Government policy. It is obvious that the settling of priorities is the very essence of planning. This is especially so in the immediate future because of the acute scarcity of certain raw materials, capital goods, and trained personnel. Unless certain industries are given a definite precedence and other definitely postponed, the best interests of the people will not be promoted.

The Sub-Committees have, in making their recommendations, already emphasised in general terms the relative urgency of the different lines of production, though no definite schedule of preferences has been drawn up by any of them. In settling such a schedule as between different industries, our Committee was confronted by two main difficulties, the uncertainty regarding the availability of capital goods and the changing conditions of foreign trade. In view of our dependence on foreign countries for the supply of machinery, the practicability of developing any particular industry will almost wholly be dependent upon factors beyond Government control and it will be entirely academic for any authority to fix an order of priority in advance. The other difficulty relates to the unsettled trend of foreign competition which, in the present international set up, is largely conjectural. Besides, other factors such as availability of raw materials and skilled labour will in any case necessitate a periodic review of any priority lists that may be drawn up now. The task being essentially dynamic will, in our opinion, be best performed by a standing Body in touch with day to day developments rather than by an *ad hoc* committee like this.

The members of this Committee are, however, generally agreed that increase in production of basic raw materials should receive Government's urgent attention, not only because these provide the foundation of a sound industrial structure but also because even the immediate expansion of the production of essential consumers' goods like food, clothing and housing is in the present circumstances considerably handicapped by lack of raw materials.

In view, however, of advancing the economy of the country as a whole, any scheme of priorities in the Province will have to be fitted into an All-India scheme. This can, in our opinion, best be done by taking into consideration the immediate needs of the Province first, and later adopting modifications, if any, in the interest of a co-ordinated policy for the country as a whole.

(2) TO RECOMMEND SUCH INDUSTRIES AS CAN BEST BE ORGANISED AS (1) LARGE-SCALE INDUSTRIES, (2) SMALL-SCALE OR COTTAGE INDUSTRIES.

As the problems presented by the small-scale industries are in many cases easily distinguishable from those presented by the large-scale industries, a separate sub-committee was appointed to go into the question of cottage and small-scale

CHAPTER III.

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(2) Priorities.

Both these problems are admittedly vital to any planning as mere directional guidance does not go far enough.

Over-all Targets.—It will be noticed that there is no prescribed level of production for industries as a whole set up by the Sub-Committees and that they have preferred to fix certain targets on practical considerations, estimating the probable demand in each case in the next 5 or 10 years. In arriving at such estimates, the Sub-Committees have viewed the economy of the Province in the light of the conditions likely to prevail in the country as a whole. They have aimed primarily at securing a large measure of self-sufficiency for the Province in those lines where the economic factors are not unfavourable. But where other parts of the country are more favourably situated and are likely to meet the whole or a large portion of the total national demand, the targets indicated for this Province have been modified accordingly. In case of industries in the establishment of which this Province has a clear advantage, the needs of areas adjacent to this Province have also been taken into account in estimating the total demand.

The Sub-Committees have, in estimating the probable demand, revised the pre-war figures of consumption in the light of probable improvement in the standard of living. In the case of food and other essential industries the basic needs of the population have been taken into account and over-all long term targets set up. Such an approach towards demand does not make very clear the general order of increase to be brought about in industrial production as a whole. The Committee appreciates the value of setting up targets which easily convey the exact order of increase required in different directions as well as on the whole. The people in the Province would then know to what extent their average income would increase by the development of new and existing industries. This would not only have a large educative value for the public but may also serve to inspire national effort towards planned industrialisation. It would further indicate the extent of our achievements. As the Sub-Committees were, however, not instructed as to the general level of production which they should bear in mind in making their plans, our Committee was anxious to make at least a rough estimate of the net effect of the

proposals contained in the Sub-Committees' reports on industrial production on the whole. It is estimated that the capital required for an industrial expansion suggested by the Sub-Committees will approximately be Rs. 200 crores exclusive of expenditure on such items as housing, transport, supply of water, power, etc. The value of production will approximately be Rs. 150 crores per year.

Priorities.—We have examined the problem of laying down an order of priority in which the different industries should be developed in this Province. It may appear at first that the extent of industrialisation carried out so far is so small and the corresponding scope for development so large that Government may not be well advised to draw any schedule of priorities but, subject perhaps to the postponement of certain clearly non-essential industries, it should promote the growth of all others. Such a view, however, would fail to give any precise direction to Government policy. It is obvious that the settling of priorities is the very essence of planning. This is especially so in the immediate future because of the acute scarcity of certain raw materials, capital goods, and trained personnel. Unless certain industries are given a definite precedence and other definitely postponed, the best interests of the people will not be promoted.

The Sub-Committees have, in making their recommendations, already emphasised in general terms the relative urgency of the different lines of production, though no definite schedule of preferences has been drawn up by any of them. In settling such a schedule as between different industries, our Committee was confronted by two main difficulties, the uncertainty regarding the availability of capital goods and the changing conditions of foreign trade. In view of our dependence on foreign countries for the supply of machinery, the practicability of developing any particular industry will almost wholly be dependent upon factors beyond Government control and it will be entirely academic for any authority to fix an order of priority in advance. The other difficulty relates to the unsettled trend of foreign competition which, in the present international set up, is largely conjectural. Besides, other factors such as availability of raw materials and skilled labour will in any case necessitate a periodic review of any priority lists that may be drawn up now. The task being essentially dynamic will, in our opinion, be best performed by a standing Body in touch with day to day developments rather than by an *ad hoc* committee like this.

The members of this Committee are, however, generally agreed that increase in production of basic raw materials should receive Government's urgent attention, not only because these provide the foundation of a sound industrial structure but also because even the immediate expansion of the production of essential consumers' goods like food, clothing and housing is in the present circumstances considerably handicapped by lack of raw materials.

In view, however, of advancing the economy of the country as a whole, any scheme of priorities in the Province will have to be fitted into an All-India scheme. This can, in our opinion, best be done by taking into consideration the immediate needs of the Province first, and later adopting modifications, if any, in the interest of a co-ordinated policy for the country as a whole.

(2) TO RECOMMEND SUCH INDUSTRIES AS CAN BEST BE ORGANISED AS (1) LARGE-SCALE INDUSTRIES, (2) SMALL-SCALE OR COTTAGE INDUSTRIES.

As the problems presented by the small-scale industries are in many cases easily distinguishable from those presented by the large-scale industries, a separate sub-committee was appointed to go into the question of cottage and small-scale

industries. This Sub-Committee has explained in detail the various industries which may be developed on a cottage or small basis and has also suggested appropriate measures for the purpose. Since then, the Government of Bombay also appointed a Committee for the Promotion of Village Industries, whose report is now available.

This Committee is aware of the existence of vital differences of approach, etc., on the problem of co-ordination of large-scale and cottage industries. Though the Committee has not been able to examine in detail each recommendation of our Sub-Committee, it agrees with its approach to the problem and generally approves the measures recommended by it. The Committee is convinced that special measures on the part of Government are necessary to revive the growth of cottage industries. The measures recommended by the Sub-Committee will, in our opinion, go a long way to revive the growth of cottage and small-scale industries.

Some of the members, however, take the view that in order to protect the interests of cottage workers, it is not enough for the State to provide facilities to promote cottage industries, but that it would be further necessary to introduce a system of licensing of large-scale industry so that no large-scale establishment may be allowed if it is likely to interfere in an undesirable manner with the growth of any cottage or small-scale industry. They feel that there cannot be any planned programme of expansion without imposing some such restriction. It is also felt that licensing can be used as a method to prevent the flow of investible resources into socially undesirable channels. At present, this function is performed to some extent by the system of Control of Capital Issue, a war-time device, and unless this is continued with the object of securing a planned investment of capital in industries related to our peace-time needs, licensing will be necessary for the purpose.

Some of us on the other hand apprehend that licensing would be too harsh a measure for the purpose and that in the immediate future, at any rate, its restrictive effect on industrial growth will be very pronounced. A person applying for a licence is invariably subjected to considerable inconvenience and loss of time in order to fulfil formalities prescribed by the licensing authority. In view of the urgent need for an all-out expansion of production, measures like licensing had better be avoided. This is a point on which the Committee has not been able to reach an agreed conclusion.

Licensing is also advocated by some as an instrument of securing dispersal of industry. This aspect of the problem is dealt with under the following term of reference.

(3) TO SUGGEST THE MOST SUITABLE SITES FOR THE LOCATION OF THE VARIOUS INDUSTRIES AFTER TAKING INTO CONSIDERATION THE AVAILABILITY OF LABOUR, WATER SUPPLY, ELECTRIC POWER, RAW MATERIALS, MARKETS, AND THE DESIRABILITY OF PREVENTING CONGESTION IN THICKLY POPULATED AREAS.

The Sub-Committees have, while indicating the directions in which industrial development of the Province is called for, also suggested the places and, in some cases, the exact sites, where these industries may be established. These recommendations of the Sub-Committees have been further reviewed by the Special Sub-Committee on Location. A summary of the report of this Committee has been given in Appendix C and the points of agreement or disagreement between the various Sub-Committees and the Special Sub-Committee can be noted from it. It is clear that if these sites are to be definitely fixed upon, further investigations will have to be carried out in most cases. The recommendations of the Special Sub-Committee may be taken to provide only an outline for the basis of future Government policy.

The main question for consideration by this Committee is to settle the general aim of a suitable location policy and to suggest appropriate methods for the purpose. We consider that Government policy in this regard should be to assist industry in getting established in areas where the economic factors are favourable and, in particular, to secure dispersal of industry. The latter is necessary in order to avoid over-crowding in large industrial centres and to create opportunities of employment in backward areas, thereby avoiding special expenditure entailed by concentration of industry. We recognise that in the selection of actual sites, economic factors, such as proximity of raw materials, labour, fuel or power supply and facilities of communication and markets, have no doubt an important bearing but even so, a deliberate effort should, in our opinion, be made to ensure decentralization of industry.

The Committee is agreed that one of the methods by which this can be achieved by Government providing land and affording facilities of water supply, power and transport in comparatively backward areas so as to attract new enterprises in such places. A very useful step in this respect is the establishment of Trading Estates. Government may select a few large sites in different parts of the Province and assist in developing them as industrial areas by providing such facilities for industries. The areas may be divided into suitable plots which may be leased to private parties. Such a policy will give a direct impetus to production as it will remove several difficulties which at present hamper new private enterprise. It will also result in the necessary dispersal of industry in a quick and direct manner.

We have discussed the question whether it will be further necessary for Government to license new factories so as to prevent over-crowding. It is considered that some restrictions on the expansion of industry in over-crowded areas will be necessary. But on the question whether the restrictions should take the form of licensing or should be enforced by legislation subject to which industrialists may be at liberty to establish their factories wherever they liked, the Committee is not unanimous. Some of us are of opinion that the selection of sites in any case is a difficult task which had better be done by the industrialists after careful consideration of the relative expenditure involved and that any scheme of licensing by the State would only retard the growth of industries. There is further difficulty in securing the right type of people who would have the required degree of ability and integrity to enforce the licensing system in a just and expeditious manner. Hence, such restrictions as the State may impose, should assume the form of general laws embodied in a Statute. This view, however, is not shared by others, who consider that though legislation may be a simpler and more convenient method, it will not in practice be found adequate for the purpose, as it cannot provide for all the circumstances which it may be necessary to take into consideration in allowing new units of production to be established in different places. A scheme of licensing is, therefore, according to them, indispensable.

(4) TO ADVISE WHETHER THE INDUSTRIES RECOMMENDED SHOULD BE PROMOTED BY GOVERNMENT OR PRIVATE AGENCY; AND IN THE LATTER CASE WHETHER GOVERNMENT SHOULD PARTICIPATE AND IF SO THE NATURE OF THE HELP WHICH WOULD BE REQUIRED.

Under this term of reference, we are asked to consider two problems:—

I—Scope of State enterprise.

II—The advisability of Government participation in private industries.

I. Scope of State Enterprise.

As regards the first problem, the issues raised are necessarily of a very general character. In many cases, however, the Sub-Committees have, in recommending

the establishment of new industries, indicated whether the same should be undertaken by private enterprise or Government agency. The general opinion of the Sub-Committees is that, as a rule, private enterprise will be appropriate and that only where private enterprise is not forthcoming and the industry requires to be urgently developed should the State step in. The question has been discussed by the Committee at great length as it feels that a stage has now been reached when Government must be assisted to formulate a definite policy in this respect. There are many conflicting suggestions made but in the absence of any authoritative pronouncement indicating the course of Government policy, there is bound to be a feeling of uncertainty which is an obstacle to industrial progress.

The question cannot in our opinion be disposed of by reference merely to certain ideological considerations. For laying down a suitable policy, it is best, according to us, to divide the problem in certain well defined groups of industries viz. Defence Industries, Basic and Key Industries, Public Utilities and Other Industries. We propose to deal with each of these, *seriatim*.

A. Defence Industries.—These include all industries directly connected with the production of armaments. A list of such industries compiled by the National Planning Committee is given below :—

1. Fire arms (land, air and marine) and their parts.
2. Munitions, cartridges, explosives, shells, torpedoes.
3. Tanks and armoured cars and other forms of mechanical equipment especially designed for military purposes.
4. Warships of all types including sub-marines.
5. Military aircraft of all kinds.
6. Gases for warfare and gas-masks.

Note.—Warships and Military aircraft can also be made in ordinary peace-time establishments.

In view of the great Military importance of these industries, the risk of leaving them to private enterprise is serious; therefore it is a clear case for State-ownership. In fact, the Government of India already own and directly control a large group of such industries. As Defence and Defence Industries are central subjects, we consider this group of industries to be not within the purview of our terms of reference.

B. Basic and Key Industries.—These are industries which have a special importance because they produce goods which are essential for the very existence of other industries. They form, however, a very large group and it is not always easy to draw a clear line of distinction between them and what may be called consumers' goods industries. The following is the list of Basic and Key Industries compiled by the National Planning Committee :—

1. Power-Hydro and Thermal (generation).
2. Fuel, coal and fuel wood, mineral oil, power alcohol, natural gases.
3. Metals, ferrous and important non-ferrous, including winning of ore for them.
4. Industries for the making of machine tools.
5. Industries for the making of machinery and machinery parts.
6. Heavy engineering industries for the building of ships, locomotives, wagons, automobiles, aircraft and the like (vital).
7. Instruments and apparatus, commercial, industrial and scientific (standards).
8. Chemicals, heavy chemicals, fine chemicals including dyes (some vital), fertilisers and refractories.

There is, in modern times, an undoubted tendency towards the growth of monopolistic forms in the organisation of these industries. In order to prevent this and further to ensure rapid expansion of these industries, there is a *prima facie* case for State ownership. But here again, the Committee does not recommend a uniform policy with regard to all Basic and Key Industries, but would like to distinguish between different types of such industries.

1. *Power-Hydro and Thermal (generation).*—There is a clear advantage in a State-co-ordinated generation and transmission of electric power so as to bring down capital expenditure and working costs. Because of the large capital outlay required for a programme of rapid electrification of the entire Province, State enterprise is necessary. The Government of Bombay has already started work on the Electric-Grid System with the object of rapid development of electric supply, both hydro and thermal, by the establishment of new power plants transmission systems and control and co-ordination of the existing ones. We understand that the Government of Bombay intends to set up a Statutory Provincial Electricity Board to give effect to their plans in this connection. We believe that these are steps in the right direction and that the extent to which State ownership should be pushed in the different stages of generation, transmission and supply of power should be decided after consideration of the practical problems which may arise for securing an effective co-ordination of electric supply.

2. *Fuel, coal and fuel wood, mineral oil, power alcohol, natural gases.*—This Province does not appear to possess any significant quantities of coal, mineral oil and natural gases and the question of State enterprise for producing them does not arise at present. Fuel and fuel wood form part of forest products which are already owned by the State. Power Alcohol and Rectified Spirit can be directly produced from molasses available in the Province, and as there is a clear advantage in having one or more centralised distilleries near the source of supply of molasses, they should best be started by the State.

3. *Metals, ferrous and important non-ferrous including winning of ore for them.*—This group of industries is not of much practical importance to this Province as, except for aluminium, this Province is deficient in nearly all the ferrous and non-ferrous metals. Aluminium, like steel, is a metal of vital importance to Defence. Moreover, in view of the shortage of non-ferrous metals in this country, there is an immediate need to develop the aluminium industry, most of the raw materials for which are available in the Province. We understand that the Government of India is setting up two Iron and Steel plants under State auspices. The production of aluminium may also be taken up by the State especially because the industry requires a large supply of electric power at concessional rates which will amount to a direct State subsidy. Since the Provincial Government has in view the development of hydro-electricity, the production of aluminium should also be started by the Provincial Government.

4. *Industries for the making of machine tools.*—Industries for the making of machine tools do not usually require large capital as their production is diversified in a number of units. We recommend that these should be left to private enterprise.

5. *Industries for the making of machinery and machinery parts.*—It is not desirable for the State to take over or establish all industries for making machinery and machinery parts, but wherever certain types of machinery are adjudged essential and private enterprise lacks the necessary capital or expert personnel or for any other reason is not forthcoming, the State should start such industries.

6. *Heavy engineering industries for the building of ships, locomotives, wagons, automobiles, aircraft and the like (vital).*—Heavy engineering industries which should include power plant amongst other items mentioned above are directly or indirectly connected with Defence and are, therefore, of great military importance. Some of them can, if necessary, be easily diverted to the production of armaments and other war materials. In the case of aircraft, there is a further consideration that the civilian demand for it would for a long time to come be insufficient and would not, therefore, attract private enterprise. The ownership by the State is, therefore, advised. These are types of industry more appropriate for control at the Centre as Defence, Railways, Shipping and Aviation are all Central subjects and the capital involved in such industries is not likely to be within the resources of a single Province. Besides, the Government of India would itself be an important consumer of the products of these industries and it is unlikely that the Provincial Governments would be allowed to own and control them. But a scheme of participation on the model of the ammonium sulphate plant started by the Government of India should be practicable.

That scheme in brief, is as follows :—

The sulphate of ammonia factory will be owned by the Central, Provincial and State Governments who contribute a certain amount by way of capital or undertake to purchase a certain quantity of ammonium sulphate for 10 years. The factory will be managed and operated by a Statutory Corporation. The Governing Body of the Corporation will consist of a certain number of Commissioners including three nominated by the Central Government and one nominated by each member-Province. (Two or more Provinces may combine contributing the stipulated amount and nominating one Commissioner).

7. *Instruments and apparatus, commercial, industrial and scientific (standards).*—Instruments and apparatus are of different qualities and specifications and their production on a large scale will not, considering their limited market, be economical. This industry may, therefore, be left to private enterprise.

8. *Heavy chemicals and fertilizers.*—Heavy chemicals are of importance to the entire economy and fertilizers are of special significance to our agriculture. For a rapid expansion of these industries and to ensure their supplies at prices which are within the reach of the prospective consumers, the production of basic heavy chemicals such as soda-ash, caustic soda and sulphuric acid and fertilizers may be started by the State.

C—*Public Utilities.*—Public utilities include Gas, Electricity, Transport and Communications. Of these, the question of electric supply has been discussed above. Railways and Shipping are of All-India importance and are, therefore, outside our terms of reference. Communications include Posts, Telegraphs and Wireless which are already organised as departments by the Central Government; so that the only important form of transport within the Province which is left for consideration is Motor Transport. As the Government of Bombay has already on its programme the nationalisation of Motor Transport, at first of passengers and then of goods, the Committee does not consider it necessary to discuss the matter. As for the supply of gas, at present only Bombay City has this service. If and when the coal situation improves and it is possible to supply gas to other large towns, preference of starting the industry may be given to local bodies and private agencies may come in only if neither the local bodies nor the Provincial Government find it possible to undertake such supply.

D—Other Industries.—The starting of industries by the State will, in our opinion, constitute a large demand on the administrative and financial resources of Provincial Governments. Until Provincial Governments successfully face and overcome the problems of State ownership of the above Basic and Key industries and Public Utilities, they should leave it to private enterprise to run other industries. Further, if in any of the cases recommended for State ownership above, Government is, for any reason, unable to undertake enterprise within a reasonable time, it may allow private enterprise to do so.

E—Problems arising from direct control of industry.—The assumption by the State of direct control of industry will raise a number of problems, the more important of which are :—

- (1) Management of State-owned Industries.
- (2) Compensation of Industries acquired by the State.
- (3) Division of Central and Provincial Spheres of ownership.

These are discussed below :—

(1) *Management.*—Such industries as are taken over by the State should not as a rule, be managed by the State directly. They should instead be managed by autonomous Statutory Bodies like Public Corporations, and be broadly free from Government control in the exercise of their daily business. The Corporations should appoint and control their own staff and make rules for the efficient and quick disposal of business. This is necessary in order that the organisation of industry should not be subjected to the formalities and delay normally associated with the functioning of Government departments. It is, of course, understood that the Corporation will be ultimately accountable to Government which in turn is responsible to the people.

(2) *Compensation.*—The question of State-ownership will in certain cases involve problems of acquisition of existing industries. As new industries have to be urgently developed the Committee does not consider immediate programme of State acquisition necessary. Should it, however, be considered desirable, it will be necessary to give fair compensation to the owners. Any policy of expropriation will not only be grossly unjust but will introduce an element of grave uncertainty in the entire economy. The amount of compensation should be decided by an impartial body of experts. Some of us are of opinion that the basis of compensation should be the fair market value and that the decision of technical experts should be final and binding on both parties. If Government is made the assessor, it would only mean the majority imposing its will upon a section of the people owning the industry. This view, however, is not acceptable to others who believe that the basis of compensation, as distinguished from its amount, should be settled by the Legislature, and that the reference thereafter to an expert body should not deprive Government and the Legislature in their capacity as the representatives of the community of having a final voice in the matter.

(3) *Division of Central and Provincial Spheres of Ownership.*—In discussing the question of State-ownership of industry above, we have given our opinion on the division of Central and Provincial spheres of action. We should, however,

like to emphasise that decisions with regard to State-ownership of Defence Industries and others which may from time to time be declared as under Central control will have to be taken by the Government of India in consultation with Provincial Governments so as to evolve a co-ordinated policy. It is possible that the ownership of such industries may be vested in some Provincial Governments acting singly or jointly, if expressly allowed by the Central Government in this behalf. Even where it is decided that the industry should be owned by the Government of India, it is, in our opinion, desirable to associate the Provincial Governments with such enterprises as in the case of Iron and Steel plants and Fertilizer factories. Similarly, where a Provincial Government is keen on nationalising a particular industry, it should keep in view the conditions prevailing in other Provinces and seek the advice of the Government of India if necessary so as not to disrupt the economies of other Provinces which taken together form a free trade area.

II—The advisability of Government participation in private industry.

We now deal with industries which are to be developed by private enterprise with the assistance of Government participation. The Sub-Committees have pointed out a number of lines of development to which private enterprise has not so far been attracted due either to difficulties of securing adequate funds or required technical personnel or for sheer lack of enterprise. The Committee believes that there will be a number of such cases in which, for one reason or the other, it will be desirable for the Government to participate in private enterprise and thereby give it an impetus. The circumstances under which such participation should be agreed to will have to be considered by Government on the merits of each case. Generally speaking if a particular enterprise has a reasonable chance of success, but has certain initial handicaps which can be overcome with direct Government assistance, participation would be necessary.

Forms of assistance.—There is then the question of the method by which Government should participate. Government need not adhere to any rigid rule in this respect. It may, in some cases, subscribe a part of the capital required for an enterprise and in other cases guarantee a minimum dividend payable to shareholders for a specified period. It may also undertake purchase of part or whole of the product of the industry or provide supply of raw materials or power at a concessional rate. We recommend that Government may adopt any one or more of these methods as it may deem fit after examining the requirements in each case. It is, of course, understood that in each case of participation, Government will be entitled to representation on the management and to a share in profits. Government may also impose certain conditions for participation, to be fulfilled by the industry. An increasing measure of Government participation at this stage will, in our opinion, be welcome both to private enterprise and Government as it will provide the former with the required funds and facilities and the latter experience and a share in the profits and control.

Intimately connected with the problem of Government participation in new private ventures are the questions of :—

- (i) Pilot Plants, and
- (ii) Industrial Finance.

These are discussed in the paragraphs below :—

(i) *Pilot Plants.*—The reports of the Sub-Committees have pointed out the urgent need of starting Pilot Plants. Normally, this should be done by private

enterprise which after ascertaining the technical and commercial possibilities on an experimental scale should decide to set up economic units. However, in the present conditions very few private firms have actually undertaken or may in the near future be expected to undertake such experiments. It is, therefore, recommended that wherever private parties are willing to start pilot plants and can prove to Government that it is not possible to start a particular industry without first starting a pilot plant, Government may sanction the establishment of such plants and secure concessions by way of exemption from Income-tax. When, however, the pilot plant becomes part of the manufacturing plant, such concessions may be discontinued.

Government should themselves start pilot plants wherever the response from private agencies is lacking because the expenditure incurred on running such plants will be compensated in the long run by the ultimate development of some of these industries. It is incumbent on the State to give a lead to the community in this respect.

(ii) *Industrial Finance*.—The facilities for finance available to private industry are generally known to be extremely inadequate. The extent to which Government can directly participate in industries by subscribing a portion of the capital is limited and the only way in our opinion to supplement adequately the existing facilities is by the establishment of a Provincial Industrial Finance Corporation. Government of India have already under consideration a proposal to start an Industrial Finance Corporation for the country as a whole, but the activities of this Corporation will in practice be restricted to the development of large-scale industries which are more or less of country-wide importance, with the result that the medium and the comparatively small-scale industries will not be adequately provided for. To remedy this we recommend the establishment of a Provincial Industrial Finance Corporation. The Committee does not consider it necessary to go into details of the composition, management, capital and functions of this body, as once the principle of the establishment of the Corporation is accepted it will not be difficult for a small departmental Committee to work this out.

Other Forms of Assistance.—Among the general measures of State assistance recommended by the various Sub-Committees, the following deserve attention :—

- (i) Survey of resources.
- (ii) Provision of water supply and drainage facilities.
- (iii) Development of transport and communications.
- (iv) Spread of technical education.
- (v) Organisation of industrial research and establishment of test houses.
- (vi) Dissemination of technical and commercial information.
- (vii) Securing supplies of machinery and other essential goods from abroad.

Nearly all these measures have been adopted by modern industrial countries and may be regarded as the minimum of State assistance to industry and have the full support of this Committee.

The Sub-Committees have also mentioned the need for more direct methods of State assistance such as :—

1. Protection by means of a duty on imports.
2. Subsidies.
3. Cheap land, raw materials and electric power ; and
4. Concessional Railway Rates.

The Committee desires to offer the following opinion in respect of these :—

1. *Protection given by means of a duty on foreign imports.*—This is a measure which is for the consideration of the Central Government and the advisability of granting protection, as also its degree and period, should be decided in each case by reference to the Tariff Board. The same applies to refund of excise duty or of import duty on raw materials or packing materials claimed for any industry. The Committee agrees that in the past, the policy of discriminating protection adopted by the Government of India has helped to promote the industrial development of the country. Considering that this is the most important single method by which the indigenous industry can be easily assisted the importance of this method of State assistance cannot be overemphasised.

2. *Subsidies.*—This is an alternative form of protection and in case of industries spread over the country, the grant of subsidies should necessarily be considered by the Tariff Board. Any policy of Provincial grants will in such cases lead to inter-provincial complications.

3. *Cheap raw material, cheap electric power and land on concession rates.*—Provision of cheap raw material, or cheap electric power or land at concession rates to any industry by the State is an important indirect financial assistance and may, therefore, be judged by Government on the merits of each case.

4. *Concessional Railway Rates.*—Lower railway rates on the transport of raw materials or finished products so as to give a fillip to industry are a recognised form of State assistance and may even be looked upon as a commercial proposition for developing the total volume of goods traffic in the future. This is a matter which is, however, not within the power of the Provincial Government.

(5) TO ADVISE GOVERNMENT IN REGARD TO PANELS TO BE SET UP FOR PARTICULAR INDUSTRIES, CONSISTING OF PERSONS SPECIALLY-INTERESTED IN SUCH INDUSTRY, SUCH AS BUSINESS MEN, INDUSTRIALISTS, AND TECHNICAL EXPERTS.

The Government of the Province will now have to play a very different role in the development of industries from the one it has assumed so far. This constitutes a fundamental departure from the *laissez faire* policy of the past. It will, therefore, be necessary for Government to be advised continuously on different aspects of industrial policy and development. This can best be done by the establishment of an Advisory Board consisting of persons interested in and having knowledge of the various aspects of industry. Such a Board will assist Government by giving its considered opinion on various questions of policy which may be referred to it. It may also set up *ad hoc* Committees or panels to investigate any special problems of a technical nature which it may not itself feel competent to handle.

We further consider that if Government launches any of the schemes suggested above, the present organisation of the Industries Department in the Province will be found entirely inadequate to the needs of the present and the future. A

much larger degree of co-ordination among various departments will also be necessary if the plan is to be implemented. In addition, therefore, to the Advisory Board suggested above, it will be necessary to set up another small Board on the analogy of the Railway Board at the Centre to take over the administration and co-ordination of the entire programme of development of industries. Such a Board, consisting of not less than 3 full-time paid members, will be expected to assume direct responsibility for initiating and guiding industries along the lines laid down by Government. Such Board may be established as soon as some of the schemes of development necessitating increase in the functions of Government are actually under way.

(6) FOREIGN CAPITAL.

Questions pertaining to the future policy of Government regarding foreign capital, though not strictly within the terms of reference, are considered here as our views on this important subject may assist Government in chalking out their policy.

At present, Foreign capital is invested in many existing industries. The Committee considers that in future such capital will have to be allowed into the country in order to make for a rapid development of our industries. It may also bring with it the experience of foreign industrialists and the services of foreign technical experts. The Committee is of opinion that foreign capital may be allowed provided the interests of the country are safeguarded and Indian personnel is employed to the maximum possible extent and trained in the shortest possible time.

CHAPTER IV.

CONCLUSION.

We hope that in the light of our discussions above the Government of Bombay will now be in a position to lay down its industrial policy and give a clear outline of it to the public in general and the business community in particular. There are many aspects of industrial policy which will have to be co-ordinated with an All-India plan but if the Government of Bombay declares its own policy it will be for the Government of India to approve or modify the same having regard to the conditions prevailing in other parts of the country.

G. D. TAPASE. (*Chairman*).

M. D. D. GILDER.

G. L. NANDA.

M. P. PATIL.

L. M. PATIL.

V. L. MEHTA.

L. M. NADKARNI.

M. P. KANGA (*Member-Secretary*).

P. B. ADVANI.

M. G. MONANI.

N. D. SAHUKAR.

A. W. PERCY.

NEVILLE N. WADIA.

CASSAMALLY MUNJEE.

N. M. JOSHI.

4th December 1947.

S. V. JOSHI.

Note.—Mr. M. A. Master has not signed the Report, being out of India.

APPENDIX A.

NAMES OF MEMBERS OF SUB-COMMITTEES.

(1) *Metals and Engineering Industries Sub-Committee.*

- | | | |
|--|---|-----------|
| 1. Mr. N. D. Sahukar (Chairman), | } | (Member). |
| 2. Sir Dhanjishah Cooper, | | |
| 3. Mr. M. A. Fazalbhoy, | | |
| 4. Mr. A. L. Guilford, | | |
| 5. Mr. H. N. Chinoy, | | |
| 6. Mr. S. C. Driver, | | |
| 7. Mr. A. Schwarz, | | |
| 8. Mr. Z. T. Kajiji, | | |
| 9. Mr. P. R. Kamani, | | |
| 10. Mr. R. P. Nevatia, | | |
| 11. Mr. K. H. Shah, | | |
| 12. Mr. N. F. Mooraj (Representing
Department of Industries), | | |
| 13. Mr. M. P. Vazifdar, Secretary. | | |

All the members of the Sub-Committee were resident in Bombay Province. At a later stage, when the Sub-Committee was well advanced in its work Mr. Guilford left India for the U. K. on leave. As at that time, the Sub-Committee was nearing its final stages, it was decided that Mr. Guilford's place should remain unfilled.

(2) *Textile Industries Sub-Committee.*

1. Mr. Neville N. Wadia (Chairman).
2. Mr. Ramdeo A. Podar.
3. Mr. M. J. Vaidya.
4. Mr. Gautam Sarabhai.
5. Dr. Nazir Ahmad.
6. Dr. K. Venkataraman.
7. Mr. N. S. V. Aiyer.
8. Mr. D. N. Savkur (Representing the Department of Industries).

During the absence of Mr. Neville N. Wadia from India from the beginning of January 1946 up to his return on the 11th February 1946, Dr. Nazir Ahmad acted as Chairman.

(3) *Chemical Industries Sub-Committee.*

The composition of the Chemical Industries Sub-Committee as fixed at the first meeting of the Provincial Industries Committee was as follows:—

- | | | |
|-----------------------|-----|---|
| Mr. N. A. Master | ... | (Chairman). |
| Mr. K. H. Vakil | ... | Co-opted as member by the Provincial Industries Committee. |
| Lt.-Col. S. S. Sokhey | ... | Co-opted as member by the Provincial Industries Committee. |
| Dr. K. Venkataraman | ... | Co-opted as member by the Provincial Industries Committee. |
| Dr. N. R. Damle | ... | Industrial Chemist representing the Department of Industries. |

Later on Mr. C. S. Patel, Managing Director of Swastik Oil Mills, Mr. C. P. Shah, Potteries and Ceramic Expert and Dr. Mataprasad were co-opted by the Chairman of the Chemical Industries Sub-Committee. As Mr. Master had to go out of India, the late Mr. K. H. Vakil was requested to officiate as Chairman of the Chemical Industries Sub-Committee. Of the original members of the Committee Lt.-Col. Sokhey suggested in his letter D. O. No. 30/4 of 1945, dated 6th September 1945, that the appointment of Dr. K. Ganapathi in his place may be more advantageous to the Committee and as such Dr. K. Ganapathi was appointed in place of Lt. Col. S. S. Sokhey.

Mr. K. H. Vakil died on the 28th January and thereafter Chairmanship of the Sub-Committee was accepted by Dr. Venkataraman from 16th of February to 7th May 1946 when he had to leave for America. Mr. C. S. Patel acted as Chairman in the absence of Dr. K. Venkataraman.

Dr. L. A. Bhatt was co-opted as member by the Chairman, Chemical Industries Sub-Committee, on the 13th of March 1946.

Dr. R. K. Trivedi was appointed as full time Secretary of the Sub-Committee on the 24th of November 1945 by Government Resolution No. 5393/33 and was in charge of the office of the Chemical Industries Sub-Committee.

The following table gives the summary of the composition of the Chemical Industries Sub-Committee :—

List of Members, Chemical Industries Sub-Committee.

Name of the Member.	Date of appointment.	Remarks.
1. Mr. K. H. Vakil	... 30th August 1945	... Co-opted member by the Provincial Industries Committee, officiated as Chairman from 13th November 1945 to 28th January 1946.
2. Dr. K. Venkataraman	... 30th August 1945	... Co-opted member by the Provincial Industries Committee, Chairman from 16th February 1946. Left for U. S. A. and U. K. on 7th May 1946.
3. Dr. Mataprasad	... 2nd November 1945	... Co-opted by the Chairman, Sub-Committee.
4. Dr. K. Ganapathi	... 2nd November 1945	... Co-opted by the Provincial Industries Committee, vice Lt.-Col. Sokhey left for U. K. on 5th June 1946.
5. Mr. C. S. Patel	... 2nd November 1945	... Co-opted by the Chemical Industries Sub-Committee. Was appointed Chairman, vice, Dr. Venkataraman from 7th May 1946.

Name of the Member.	Date of appointment.	Remarks.
6. Mr. C. P. Shah	... 2nd November 1945	... Co-opted by the Chairman, Sub-Committee.
7. Dr. N. R. Damle	... ..	Representing Department of Industries. Ceased to be member from 21st June 1946.
8. Dr. M. R. Mandlekar	... 21st June 1946	... Represented the Department of Industries from 21st June 1946.
9. Dr. L. A. Bhatt	... 13th March 1946	.. Co-opted by the Chairman, Chemical Industries Sub-Committee.
10. Dr. R. K. Trivodi (Secretary).	... 24th November 1945	.. Appointed under Government Resolution No. 5393/33, dated 8th March 1946.

/ (4) *Food and Forest Industries Sub-Committee.*

1. Mr. Cassamally Munjee, J.P., President, All India Muslim Chamber of Commerce, Bombay. Chairman.
2. Mr. J. Petty, O.B.E., M.C., B.A., F.F.S., Conservator of Forests (Planning), Poona. Special Member.
3. Dr. G. S. Chima, D.Sc., C.I.E., Director of Agriculture, Government of Bombay, Bombay. Member.
4. Rao Bahadur S. S. Salimath, B.Ag., Deputy Director of Agriculture, Poona. Member.
5. Dr. S. B. Setna, M.Sc., Ph.D. (Cantab), F.R.M.S., E.N.I., Director of Fisheries, Bombay. Member.
6. Mr. S. N. Kesarkodi, B.A., M.Sc. (Calif.), Forest Utilisation Officer, Bombay Province, Poona. Member.
7. Dr. N. R. Damle, Special Officer, Provincial Industries Committee, Bombay. Member.
8. Mr. N. K. Sheshadriengar, Paper Expert, Department of Industries, Bombay, Poona. Member.
9. Dr. J. Daji, M.A., B.Sc., Ph.D., Agricultural Chemist to the Government of Bombay, Poona. Member.
10. Mr. Jaisingh Vithaldas Kanji, Director, Wallace Flour Mills Co. Ltd., Bombay. Member.
11. Rao Bahadur Hansraj Shet, Director, Wallace Flour Mills, Co. Ltd., Bombay. Member.
12. Mr. J. K. Kirk, Factory Manager, Britannia Biscuits Ltd., Bombay. Member.
13. Mr. G. R. Sathe, Proprietor, Sathe Biscuits Co., Poona. Member.
14. Mr. S. M. Dahanukar, Director, M. L. Dahanukar & Co., Managing Agents, Maharashtra Sugar Mills Ltd., Belapur. Member.
15. Mr. B. S. Dabke, B.Com., F.B.E.S., F.S.S., Director, Phaltan Sugar Works and Director, Morarji Gokuldas Mills, Ltd., Bombay. Member.
16. Mr. N. Y. Kashalkar, General Manager, Madhu Canning Co., Bombay. Member.

17. Mr. M. P. Polson, Director, Messrs. Polson Ltd., Bombay. Member.
18. Mr. M. Y. Killedar, Proprietor, Killedar United Dairies, Bombay. Member.
19. Dr. H. R. Nanji, Ph.D., Director, Pure Products Ltd., Santa Cruz, Bombay. Member.
20. Mr. A. Karmally, Managing Director, Bombay Coastal Refrigerating Co. Bombay. Member.
21. Mr. R. A. Dubash, Ardeshir B. Cursetjee & Sons, Bombay. Member.
22. Mr. C. S. Patel, Director, Swastik Oil Mills, Bombay. Member.
23. Mr. B. R. Krishnamurthi, B.E., A.M.I.E., Tobacco Manufacturers (India) Ltd., Bombay. Member.
24. Mr. V. S. Vaidya, B.A., Director, Canara Paper and Pulp Mills, Bombay. Member.
25. Mr. A. D. Chaudhari, Paper Technologist, Partner, Viswas and Co., Managing Agents, Deccan Paper Mills, Poona. Member.
26. Mr. Dwarkadas Purshottam, Sunderdas Saw Mills, Mazgaon, Bombay. Member.
27. Mr. Linubhai Hiralal Banker, John Roberts, Co. Ltd., Sewri, Bombay. Member.
28. Mr. Ahmad Khan, Proprietor, Ahmed Shipyard, Colaba, Bombay. Member.
29. Mr. J. Stevenson, Proprietor, J. Stevenson and Co., Mazgaon, Bombay. Member.
30. Mr. C. R. Shroff, C. Shroff and Co. and Representative of Association of Indian Industries, Bombay. Member.
31. Dr. R. M. Vaidya, Ph.D., Secretary.

Formation of Specialised Committees :—

Due to the range of the work and the important industries covered by the Sub-Committee it was found necessary to appoint specialised committees as under :—

I—Foodstuffs—

1. Rao Bahadur S. S. Salimath, Chairman.
2. Dr. G. S. Chima.
3. Dr. J. A. Daji.
4. Mr. C. R. Shroff.
5. Mr. Krishnamurthi.

II—Canned Foodstuffs—

1. Mr. N. Y. Kashalkar, Chairman.
2. Mr. C. S. Patel.
3. Mr. B. Pettier.
4. Mr. Chinubhai Manibhai.
5. Mr. H. K. Irani.
6. Mr. S. R. Gandhi.
7. Mr. Bansilal Manekchand.
8. Mr. K. J. Jathar.

III—Processed Foods—

1. Rao Bahadur Hansraj Seth, Chairman.
2. Mr. T. P. Patel.

IV

Confectionery—

1. Mr. G. R. Sathe, Chairman.
2. Mr. B. P. Sahasrabudhe.
3. Mr. K. G. Karnik.
4. Dr. H. R. Nanji.

V

Sugar and Power Alcohol—

1. Mr. B. S. Dabke, Chairman.
2. Dr. R. M. Vaidya.
3. Mr. D. D. Deshpande
4. Mr. D. M. Dahanukar.
5. Mr. D. V. Kelkar .
6. Dr. N. R. Damle.
7. Rao Bahadur Gokhale.
8. Khan Bahadur A. S. Dalal.
9. Mr. C. G. Agashe.

VI

Oils and Vegetable Ghee—

1. Mr. C. S. Patel, Chairman.
2. Mr. A. Shohet.
3. Mr. S. M. Dahanukar.
4. Mr. H. R. Raja.
5. Dr. R. K. Trivedi.
6. Dr. R. M. Vaidya.

VII

Forest—

1. Mr. S. N. Kesarkodi, Chairman.
2. Mr. A. D. Chaudhari.
3. Mr. Sheshadriengar.
4. Mr. C. R. Shroff.
5. Mr. Daruwala.

VIII

Paper—

1. Mr. A. D. Chaudhari, Chairman.
2. Mr. V. S. Vaidya.
3. Representatives of various paper manufacturing concerns.
4. Dr. R. M. Vaidya.

IX

Manufactured Wooden Articles—

1. Mr. Dwarkadas Purshottam Asar, Chairman.
2. Mr. Linubhai Hiralal Banker.
3. Mr. J. Stevenson.

X

Boat-Building—

- Mr. Ahmed Khan.

(5) *Miscellaneous Industries Sub-Committee.*

- | | | | | |
|-----|---------------------------|---|---|---|
| 1. | Mr. A. W. Percy | .. | Chairman | |
| 2. | Mr. J. Ghosh | .. | Tanning Expert and Superintendent,
Tanning Institute, Bandra. | } To represent the Department of Industries. |
| 3. | Mr. R. S. Bhalekar | .. | Leather Expert and Superintendent,
Leather Working School, Bandra. | |
| 4. | Dr. A. Karl | .. | Special Research Officer, Poona. | |
| 5. | Mr. P. S. Pandit | .. | Managing Agent, Western India
Tanneries, Ltd. | } Co-opted on the suggestion of the Secretary, Provincial Industries Committee. |
| 6. | Mr. Kaiser Ahmad | .. | Of Messrs. Indian National Footwear Corporation. | |
| 7. | Mr. P. C. Marathe | .. | B.Sc., D.Tech., Consulting Chemist. | |
| 8. | Mr. M. G. Kotibhaskar. | .. | M.A.M.Sc., Tech. (Vict.), A.M.I. Chem. E. (Lond.). | |
| 9. | Mr. A. D. Wenzel | .. | Representative of Messrs. Firestone Tyre and Rubber Co. of India, Ltd. | |
| 10. | J. Cermak | .. | Of the Janda Rubber Manufacturing Company as a representative of the Footwear Industry. | Co-opted by Sub-Committee on 23rd October 1945. |
| 11. | Mr. S. C. Parikh | .. | Representative of Gold Filled Leather Works. | } Co-opted by the Sub-Committee at its meeting on 23rd October 1945. |
| 12. | Mr. Lalit Mohan Jamnadas. | (Resigned from 7th August 1946 as he was going abroad). | Representative of Rubber Manufacturers' Association. | |
| 13. | Mr. B. V. Trivedi | | Secretary. | |

Panels.—At the second meeting of the Sub-Committee held on 18th December 1945, the Sub-Committee was divided into 2 panels, viz. :—

1. *The Leather-Cum-Allied Industries' Panel.*—To report on the Leather and Leather Goods industries (including the oil and leather-cloth industries), and the Glue and Gelatine industries, and

2. *The Rubber Industries' Panels.*—To report on the Rubber and Rubber Goods Industries, with powers to co-opt as members, persons connected with the respective industries.

The personnel of the Panels, after co-option, was as follows :—

Leather-Cum-Allied Industries' Panel :—

1. Mr. P. S. Pandit ... Chairman.
2. Mr. A. W. Percy ... Member (till he resigned).
3. Mr. P. C. Marathe ... Member.
4. Mr. M. G. Kotibhaskar ... Member.

5. Mr. S. C. Parikh ... Member.
6. Mr. Kaisar Ahmad ... Member.
7. Mr. J. Ghosh ... Member.
8. Mr. R. S. Bhalekar ... Member.
9. Mr. S. Raja ... Member (Co-opted as from 7th March 1946).

The Rubber Industries' Panel—

1. Lalit Mohan Jamnadas ... Chairman (till he resigned on 7th August 1946).
2. Mr. A. W. Percy ... Member (till he resigned).
3. Mr. P. C. Marathe ... Member.
4. Mr. A. D. Wenzel ... Member.
5. Mr. J. Cermak ... Member.
6. Dr. A. Karl ... Member.
7. Mr. V. S. Vaidya ... Member (co-opted as from 18th March 1946).
8. Dr. V. R. Sharma, Ph.D. ... Member (co-opted as from 26th June 1946).
9. Mr. K. K. Mody ... Member (co-opted as from 14th August 1946, *vice* Mr. Lalit M. Jamnadas resigned).

Mr. A. W. Percy, resigned from the Sub-Committee, in the last week of April 1946, as he was going abroad. The Government thereupon, appointed in the last week of May 1946, Mr. P. S. Pandit a member of this Sub-Committee, as its Chairman, and Mr. L. A. Halsall, vice-President of the Bombay Chamber of Commerce, as a member, *vice*, Mr. Percy resigned.

(6) Cottage and Small-Scale Industries Sub-Committee.

1. Mr. M. P. Kanga, M.Sc. (Tech.), J.P. Director of Industries, and Member and Secretary, Provincial Industries Committee ... Chairman.
2. Mr. P. J. Chinmulgund, I.C.S., Joint Registrar of Co-operative Societies, Nominee of the Registrar of Co-operative Societies ... Member.
3. Mr. N. M. Joshi, B.A. ... Do.
4. Mr. V. L. Mehta, B.A. ... Do.
5. Dewan Bahadur H. L. Kaji, J.P., I.E.S. (Retd.) ... Do.

- | | | |
|---|-----|------------|
| 6. Mr. F. E. Bharucha, L.M.E., M.I.Mech.E. (Lond.),
M.I.E. | ... | Member. |
| 7. Prof. D.R., Gadgil, M.A.M. Litt, | ... | Do. |
| 8. Mr. J. K. Mehta, M.A. | ... | Do. |
| 9. Mr. S. K. Kallapur, B.A., LL.B. | ... | Do. |
| 10. Dr. R. D. Desai, D.Sc. | ... | Do. |
| 11. Dr. S. M. Dhume, D.Sc., Ph.D., (Lond.) | ... | Do. |
| 12. Mr. S. Y. Anandkar, | ... | Do. |
| 13. Rao Saheb B. M. Rane, I.S.O., B.A., J.P. | ... | Secretary. |

Mr. Vaikunth L. Mehta resigned when he assumed office of the Minister of Finance, Co-operation and Village Industries, Province of Bombay.

Professor D. R. Gadgil resigned his membership in February 1946 on account of his pre-occupation in Poona.

(7) *Special Sub-Committee.*

- | | | |
|--|-----|------------|
| 1. Mr. S. V. Joshi, B.A. (Cantab.), J.P. | ... | Chairman. |
| 2. Mr. R. A. Collett, O.B.E., M.Inst.C.E., F.R. San. I., | ... | Member |
| 3. Mr. J. C. Lancashire (Representative of Employers) | ... | Do. |
| 4. Mr. F. J. Hecht | ... | Do. |
| 5. Mr. N. V. Phadke, M.A., LL.B. (Representative of
Labour) | ... | Do. |
| 6. Major E. Benjamin, D.P.H. | ... | Do. |
| 7. Mr. N. G. Kewalramani, B.Sc. (Eng.) Glas, C.P.E.,
B.E., M.R.San.I. | ... | Do. |
| 8. Mr. H. Khan, F.S.I., A.I.A.A. (Lond.), A.I.I.A. (Lond.) | ... | Do. |
| 9. Dr. S. M. Dhume, D.Sc., Ph.D. (Lond.) | ... | Do. |
| 10. Mr. N. F. Mooraj, Dip. F.H. (Lond.) | ... | Do. |
| 11. Dr. M. R. Mandlekar, B.I.C., Ph. D. (Lond.) | ... | Do. |
| Mr. F. B. Baria, B.A. | ... | Secretary. |

Mr. J. C. Lancashire, who was granted leave of absence, resumed membership of the Sub-Committee. During his absence on leave Mr. Bhagwandas C. Mehta was appointed as the representative of employers on the Sub-Committee.

Mr. R. A. Collet having proceeded on leave preparatory to retirement, Mr. S. E. Wadia, who has been appointed Public Health Engineer to Government, took his place on the Sub-Committee.

APPENDIX B.

APPENDIX B.

PROVINCIAL INDUSTRIES, COMMITTEE.

Industry.....

QUESTIONNAIRE

I. GENERAL—

- (1) Name of the manufacturing concern
- (2) Address
- (3) Year of Establishment
- (4) Particulars of correspondence with or application to Government ...

II. EXISTING FACTORY OR FACTORIES—

(1) Production—

✓ What are the products (semi-finished and/or finished) and by-products at present manufactured; their use and the approximate production—

Product.	Use.	Quantity produced per annum.		
		Pre-war years, 1935 to 1939.	During war, 1940 to 1944.	In any other year which the industry considers typical.

(2) Raw Materials—

What are the raw materials and process materials used and from where are they obtained? What are the present facilities for the transportation of raw materials to your factory; are these adequate?

Raw materials.	Source.		Approximate quantity consumed per year		
	Indigenous.	Imported.	Pre-war years, 1935 to 1939.	During war, 1940 to 1944.	In any other year which the industry considers typical.

(3) Power, fuel, refractories, etc.—

- ✓ (a) What is the kind of power used by you?
- (b) Do you generate it yourself or buy it?
- ✓ (c) What was the average annual consumption of power before and during the war (1940-44)?
- (d) Are power resources of your factory adequate for any post-war extension that may be needed?
- (e) If purchased, at what price do you purchase power?
- ✓ (f) What fuel do you use and at what rate is it available?
- (g) What was the average annual consumption of fuel before and during the war?
- (h) Can oil be substituted for fuel used by you?
- (i) From where do you obtain your refractories, if used?

APPENDIX B—*cont'd.*

- (4) Process—
 ✓ Please describe briefly the technology of your manufacturing process ...
- (5) Location of factories—
 (a) Where are your factories located?
 ✓ (b) Is the industry located in one or more regions, and if so, are there any special reasons for this location?
 ✓ (c) Are there any particular regions where the industry could be suitably localised, taking into account the availability of raw materials, proximity to market, etc.?
- (6) Plant and Equipment—
 (a) What important plant and equipment is now employed? ...
 (b) What important equipment has been indigenously fabricated? ...
 (c) What important equipment was imported (source of supply may be indicated)?
 (d) How much of the plant and machinery is held on account of the fabrication of war orders and how much has been installed which will be surplus to normal peace requirements?
 (e) Additions and alterations to plant contemplated
- ✓ (7) Capital—
 (a) What is the amount of capital of your Company and how much do you plan to spend on the immediate and future post-war developments?
 (b) What amount of foreign capital, if any, is now invested in your Company?
 (c) What is the book value of the land and buildings?
 (d) What is the book value of the plant including machinery?
- (8) Market—
 ✓ (a) How and where do you market your products?
 ✓ (b) Is there a reasonable constant demand in the market for your products?

- ✓ (c) Is there any possibility of exporting your goods ?
- ✓ (d) Does the quality of your products compare favourably with the quality of imported articles; if not, state the reasons for the inferiority and how the quality can be improved
- (9) Government assistance—
 - ✓ (a) Do you need any Government protection? If so, indicate its nature and extent
 - ✓ (b) Do you get any Government protection or assistance at present? If so, specify the same
- (10) War orders etc.—
 - ✓ What proportion of the output is supplied against orders from Government or Military?
- (11) Labour—
 - ✓ (a) What is the total labour—skilled, semi-skilled and unskilled employed in your factories?
 - ✓ (b) Do you use any expert technical advisers from abroad and will you need them in the post-war period?
 - ✓ (c) Do you work in one, two or three shifts? How many shifts do you expect to work now after the war?
 - ✓ (d) What is the average approximate wage paid to unskilled, semi-skilled and skilled labour?
- (12) Control by Cartels and Associations—

Are the raw materials or the finished products of industries similar to yours controlled by world-wide cartels or associations outside India, and if so, are you a member of such an organisation or contemplate being a member of such an organisation?
- (13) Membership of Associations—

Are you a member of any association of Indian manufacturers using similar raw materials or producing similar products as your own with a view to have planned production and marketing, or would you welcome forming an association?
- (14) Research—
 - ✓ Has any research been conducted or is there any research being made in connection with your industry?

Notes.—1. If possible the average approximate cost of production and marginal profit may please be indicated.

2. Any other information for guidance will be appreciated. A copy of the Memorandum and Articles of Association of your Company may kindly be supplied. Also a copy of the Annual Report of the Company may please be supplied.

APPENDIX B—*contd.*

III. NEW FACTORY OR FACTORIES—

(1) Production—

What are the products (semi-finished and/or finished) you intend manufacturing; their use and what will be the approximate production?

Products.	Use.	Quantity to be produced per annum.

34

(2) Raw materials—

What raw materials will you use and the source from which they will be obtained?

Raw Materials.	Source.		Approximate quantity to be consumed per year.
	Indigenous.	Imported.	

- (3) Power, fuel, refractories, etc.—
- (a) What kind of power will you use ?
- (b) Will you generate it yourself or buy it ?
- (c) What will be the average consumption of power per annum ? ...
- (d) Are power resources of your factory adequate for the extension ? ...
- (e) If you will purchase the power, at what rate are you likely to be supplied with it ?
- (f) What fuel will you use ?
- (g) What will be the annual consumption of fuel ?
- (h) Can you use oil as well ?
- (i) From where will you get refractories, if required ?
- (4) Process—
Please describe briefly the technology of the manufacturing process you will use
- (5) Location of factories—
- (a) Where will your factories be located ?
- (b) Will the industry be located in one or more regions ? If so, are there any special reasons for the location ?
- (c) Are there any particular regions where the industry could be suitably located, taking into account the availability of raw materials, proximity to market, etc. ?
- (6) Plant and Equipment—
- (a) What important plant and equipment do you intend employing ? ...
- (b) What equipment will be indigenously fabricated ?
- (c) What equipment do you intend importing (source of supply may be indicated) ?
- (d) Have you made any arrangements for obtaining machinery and if so, with whom and from where ?

APPENDIX B—*contd.*

- (7) Capital—
- (a) What is the total amount of capital required and how much do you plan to spend on the immediate and future post-war developments ?
- (b) Are your future capital requirements likely to be met by public investments in India or do you propose to use foreign capital ? ...
- (8) Market—
- (a) How and where will you market your products ?
- (b) Will there be any reasonable constant demand in the market for your products ?
- (c) Will there be any possibility of exporting your goods ?
- (d) Will the quality of your products compare favourably with the quality of imported articles ; if not, state the reasons for inferiority and how the quality can be improved
- (e) State what scope and extent of future development you contemplate for your industry by way of increased production, variety of manufactured products, marketing, etc. ?
- (f) Do you intend to enter in the export market, if so, to what extent ?
- (9) Government assistance—
- (a) Will you need protection now after the war, if so, what kind of protection will be necessary ?
- (b) Are you aware of any protection being given to such an industry by Government in other countries ?
- (c) Do you desire that Government should control your industry now after the war ?
- (10) War Orders—
- What material can you produce which will be useful in war time ? ...
- (11) Labour—
- (a) What will be the total labour (skilled, semi-skilled and unskilled) employed by you ?

(b) In case the future development of your industry depends on technical advice, patents and plants from foreign firms, how do you propose to obtain them ?

(12) Control by Cartels and Associations—

Are the raw materials or the finished products of industries you intend making controlled by worldwide cartels or associations outside India, and if so, are you a member of such an organisation or contemplate being a member of such an organisation ?

(13) Membership of Associations—

Are you a member of any association of Indian manufacturers using similar raw materials or producing similar products as your own with a view to have planned production and marketing or would you welcome forming an association ?

(14) Research—

Has any research been conducted or is there any research being made in connection with your industry ?

Note.—Any other information for guidance will be appreciated. A copy of the Memorandum and Articles of Association, if available, may be supplied.

IV. REPLACEMENT—

Can you indicate roughly—

- ✓ (a) What capital assets in terms of plant, machinery and equipment require their replacement now after the war ?
- ✓ (b) From what source they could best be obtained in the near future and
- (c) Approximate Rupee value ?

V. PRODUCTION AND CONSUMPTION—

- (1) What is the total approximate production of the goods such as manufactured by you (a) in Bombay and (b) in India ?
- ✓ (2) What is the total consumption (a) in Bombay and (b) in India ?

VI. IMPORTS AND EXPORTS—

- ✓ (1) What are the total imports of products similar to those produced by you (a) into Bombay and (b) into India ?
- ✓ (2) What are the exports (a) from Bombay and (b) from India ?

APPENDIX C.

SUMMARIES OF THE MAIN RECOMMENDATIONS OF THE SUB-COMMITTEES.

(1) SUMMARY OF MAIN RECOMMENDATIONS OF THE METALS AND ENGINEERING INDUSTRIES SUB-COMMITTEE.

PART I.

The Iron and Steel Industry.

(a) Government should, in view of the large demand for iron and steel in Western India and the desirability of working a basic iron and steel industry in the Province, appoint immediately a Committee consisting of eminent steel producers and technical experts to examine the proposal for the establishment of a basic iron and steel industry at Kalyan.

(b) Bombay Province offers good advantages for the manufacture of cotton baling hoops in view of the fact that it is the largest cotton baling centre and also because billets could be imported from abroad at lower rates through Bombay Port. The development of this industry in the Province should be further investigated and encouraged.

(c) There is room for an increase in the manufacture of steel castings in the Province.

(d) For the future expansion of the Provincial re-rolling industry, we recommend the expansion of the production capacity of the existing units instead of the establishment of new factories. Government should render all facilities to the industry, particularly in such matters as the easy acquisition of land, supply of adequate electric energy at cheap concession rates, rapid imports of plant and machinery, etc.

(e) Government must take suitable action to supply an adequate quantity of billets to the Provincial re-rollers.

(f) As re-rolling from scrap will be necessary, Government would be required to place an embargo on the exports of steel scrap. Before any action is taken this question should be carefully investigated by Government.

(g) As soon as substantial demand develops, Provincial re-rollers should concentrate their attention on the rolling of special sections, which are not at present made in the country. But, until such time as the demand for special sections is small, the industry should be allowed to re-roll ordinary sections as well.

(h) Government should closely watch the situation and act promptly in the event of any large-scale cheap imports of wire and wire products.

(i) If Messrs. Guest, Keen and William Ltd., plan to dismantle their Bhandup Works, established for the manufacture of bolts, nuts, rivets, etc. Government should negotiate with this firm for the outright purchase of this factory for the ultimate purpose of handing it over to a public limited company. In any event Government should immediately take positive steps for the establishment of this industry in the Province.

(j) It is not worthwhile to consider the establishment of a tinplate industry in the Province, until a steel sheet mill industry has been properly established.

The Non-Ferrous Metals Industry.

(a) Steps should be taken immediately to investigate new sources of ores of copper. To supplement the present production of copper in India, we strongly recommend the establishment, in Bombay Province, of a smelter producing electrolytic copper from imported ores and concentrates pending an investigation into the availability of local ores.

(b) Sources of lead ores believed to be located in Rajputana States, Bihar, Central Provinces, Gwalior, etc., should be immediately prospected. We do not recommend the installation of a small lead smelter in the Province operating on imported ores.

(c) Government should closely examine the economics of establishing a suitable zinc smelter in the Province.

(d) It will be necessary, for some time to come, to continue the detinning of tin plate scrap to supplement our scanty supplies of tin. For this purpose, Government should prohibit the exports of tin plate scrap and permit its imports free of duty.

It is not economically feasible to establish a tin smelter in the Province on account of the small requirements of India.

(e) Government should immediately prohibit the export of manganese ores mined in the Province. Government should encourage its conversion into ferromanganese.

(f) The antimony reduction industry established in the Province should be aided by way of protection or subsidy. Government should give facilities to this industry for the purchase of foreign plant and equipment.

(g) Adequate attention should be paid to the secondary production in the Province of non-ferrous metals from scrap. Government should permit duty free imports of non-ferrous metals scrap and prohibit its exports. Further, railway freights on the movement of scrap should be reduced. Government should also assist the Provincial secondary producers in getting up-to-date electric furnaces and making available to them more electric power at cheap rates.

(h) A number of Provincial re-rolling mills producing non-ferrous semies are inefficient for re-rolling work. For increasing the manufacture of semies in the Province, we recommend the setting up of new modern rolling mills.

(i) Imports of semies should be controlled by Government in the interest of the Indian non-ferrous semies manufacturing industry.

(j) It is absolutely essential that facilities should be granted by Government for the import of an Extrusion Press. The Press should be operated in the Province under Government control.

(k) Two up-to-date rolling mills should be imported and installed in Bombay Province for the production of 7,000 to 8,000 tons of brass sheets and circles and about 4,000 tons of copper sheets and circles.

(l) The brass and copper wire industry requires modern continuous wire drawing equipment to bring down cost of production.

(m) The Provincial lead sheets industry would do well to roll 8' wide lead sheets, for which there would be a very good demand in the future.

(n) Government should take steps to encourage the establishment, in Bombay Province, under private ownership, of a lead pipe manufacturing concern.

(o) Government should take all possible steps to solve the difficulties of the producers of bearing metals, phosphor bronze, gun metal, etc., as a number of consumers' goods industries in the Province are dependent upon them.

(p) Government should encourage, the import of foundry machinery for the production of non-ferrous metal castings.

(q) Government should take positive steps for the cheap production in the Province of all non-ferrous metals.

(r) If suitable ores of non-ferrous metals are not found in the Province, Government should even encourage the import of foreign ores for reduction in the Province.

(s) If the reduction of virgin metals is thus undertaken in the Province, it is logical to levy an import duty on virgin metals, which are to be produced in the Province, at the same time permitting duty-free imports of the ores.

The Aluminium Industry.

(a) We recommend the establishment in Bombay Province of one reduction plant for producing aluminium with an annual capacity of about 3,500 tons.

(b) We also recommend the establishment in Bombay Province of a rolling unit with a capacity of 3,500 tons per annum of all sorts of aluminium semies.

(c) To successfully establish this industry in the Province, Government should undertake a comprehensive geological survey to determine the quantity and quality of the workable deposits of bauxite.

(d) The industry should be located in an area well served by cheap electric power. In this connection location near the Koyna River Hydro-Electric Project would be very advantageous.

(e) Government should provide all facilities for the purchase of plant and machinery from abroad as well as grant permits for the purchase of building materials locally.

(f) Some sort of Government control over the industry is necessary.

The Prime Movers Industry.

(a) There is yet some room for an increase in the production of diesel oil engines in the post-war period considering the possibilities of an export market and an increase in consumption in the wake of industrial development.

(b) We recommend that firms already engaged in the manufacture of internal combustion engines should actively consider and even plan production schedules for other types of prime movers to satisfy the future market.

(c) The prime movers industry requires a considerable amount of foreign technical help. We recommend that Government should not only promote an effective liaison between India and foreign manufacturers, but also provide facilities for imports of the latest plant and equipment.

(d) Arrangements should be made in India for the manufacture of all such raw materials as are imported, so that they may be available to Indian manufacturers at as low rates as paid for by foreign producers. In the initial period, custom duties on imported component parts, etc., should either be completely removed or drastically reduced.

(e) In the manufacture of prime movers specialisation is very important. We, therefore, recommend the manufacture of only one type of prime mover under one roof. Further, the industry must be able to manufacture perfectly interchangeable parts and components.

(f) Stage inspection is particularly important to ensure standardization and interchangeability of component parts.

(g) Each manufacturer of prime movers should possess a well-equipped test and research laboratory to carry out all tests on the floor and be sure of the quality of the engines marketed.

(h) Government should give all possible assistance to prospective manufacturers of such component parts as fuel oil pumps, fuel oil injectors, crank shafts, piston rings, etc.

(i) We recommend some form of licencing scheme whereby foreign producers are allowed to supply only that portion of the Indian market for diesel engines which is not supplied by Indian producers. Subsequently, when other types and categories of prime movers are manufactured, the licencing scheme should be extended to cover these types also.

(j) All purchases of prime movers made by Government and semi-Government bodies, public corporations, railways, etc. should be obtained from Indian producers, provided the quality of the products is up to the standard laid down.

(k) The industry must be organised on a large-scale to secure economies of production.

(l) Government are strongly advised to undertake the manufacture in a State-managed factory of such types of prime movers—water, gas and steam turbines, steam engines, petrol engines, etc.

The Machine Tools Industry.

(a) Government should provide facilities to manufacturers for the procurement of raw materials of proper grade and quality at prices comparable with the United Kingdom prices for such materials. Government should also release for the use of the industry, such materials as high speed tool steel, copper, zinc, tin, etc., acquired under lease-lend, at prices comparable with those prevalent in the United Kingdom at present.

(b) Government should play an important part in providing facilities for the purchase of plant and equipment from abroad.

(c) The system of inspection undertaken by the Inspection Directorate of the Indian Stores Department should be availed of by manufacturers, who should also adopt the "stage inspection" method for an improvement in the quality of machine tools manufactured.

(d) Manufacturers should set up well organised research and test laboratories.

(e) Government should license the imports into India of only those Grade I machine tools which are manufactured in India. Government should appoint a small committee of prominent manufacturers and consumers to assist them in the licensing scheme.

(f) An organisation should be set up for fixing maximum and minimum prices of machine tools manufactured in the country.

(g) Government should lay down standards of specifications for materials, workmanship, tolerances and performance of machine tools.

(h) Government should engage the services of specialists, who would be experts on such subjects as foundry practice, metallurgy, machining operations and metrology.

(i) To enable Indian manufacturers to establish contracts with foreign manufacturers for the development of the industry, Government should render them whatever help they may require through the services of their representatives abroad.

(j) Provincial manufacturers who are not producing Grade I Machine Tools should make all efforts to produce them and Government should give all assistance to enable them to raise the standard of their machine tools.

(k) Government should assist the industry in the easy acquisition of land for expansion purposes.

The Electrical Machinery and Accessories Industry.

(a) There is a potential field for the manufacture, in Bombay Province, of a standard range of transformers of Pole-mounting and Floor-mounting types up to 500 K. VA capacity, if benefits of foreign designs and manufacturing experience could be obtained. Government should consider the laying down of a long-term policy by which electric companies would be required to give preference to Indian made transformers provided they are of the required standard.

(b) There is a large field for the manufacture, in Bombay Province, of small size electric motors, if benefits of designs and experience of foreign manufacturers could be availed of.

(c) Until an industry for the manufacture of prime movers is firmly established in India, the manufacture of generators cannot be undertaken successfully without the co-operation of Government.

(d) The Prospects of establishing a heavy switchgear industry in India are not practical at present without Government help. Practical consideration.

would limit the manufacture of switchgears to simpler forms of switches and starting equipment for small and medium size alternating current electric motors of standard types.

(e) The best location for an industry manufacturing electric motors and transformers would be in an area within daily reach of a city like Bombay.

(f) The question of the establishment of new factories for production of dry cells may be further examined.

(g) There will be no room for an immediate expansion of the secondary batteries' industry. Government should, however, favourably consider the grant of protection to this industry, if they are satisfied, that it has achieved a reasonably efficient standard.

(h) With the early establishment of the Electric Grid System, there would be room for the establishment of one or more factories producing 1½ million to 3 million bulbs a year. However, the industry must lessen its reliance on foreign supplies of raw materials and component parts.

(i) There is room for the establishment in the Province of one or more factories producing about 5,000 table fans per annum.

(j) Government should take active steps for the establishment in the Province, under private ownership, or with Government participation, of factories manufacturing electric motors, transformers, generators, switchgears and other electrical accessories and appliances.

The Cotton Textile Machinery Industry.

(a) Immediate steps should be taken to start, on a medium scale, the manufacture of modern simpler types of cotton textile machinery. We recommend that two sets of textile machinery manufacturing plants should be immediately established one each at the main cotton textile manufacturing centres of Bombay and Ahmedabad.

(b) The machinery produced should be of the best quality comparable in efficiency and modernity with the best available from any foreign country.

(c) The industry should obtain the latest designs of the various types of cotton textile machinery which are to be manufactured.

(d) If this industry is established we recommend that only such cotton textile machinery and plant should be allowed to be imported into India, as are not manufactured in India, in the right specifications and of an approved quality.

(e) We recommend a considerable improvement in business methods and sales approach.

(f) Government should render all possible aids to parties interested in the possibilities of manufacture of various types of cotton textile machinery. Government should even actively interest themselves in the industry and enter this manufacturing field if a comprehensive scheme of manufacture by private enterprise fails to materialise.

The Steel Safes, Cabinets, etc. Manufacturing Industry.

(a) Government should take immediate steps to procure for the industry all its requirements of industrial raw materials and also facilitate the imports of such raw materials and machinery as are not available in India at prices comparable to those paid for these items by foreign manufacturers.

(b) The industry would benefit if custom duties levied on the imports of raw materials required by the industry are, at least in the initial period, either completely abolished or reduced to a bare minimum.

(c) All Provincial manufacturers with the exception of Messrs. Godrej & Boyce Mfg. Co., and the Noble Steel Products, Ltd. are strongly advised to improve their processes of manufacture to withstand competition. Government should render these concerns whatever assistance they require to achieve this and particularly help them in the procurement of raw materials at fair prices and in the imports of plant and equipment and also give them technical guidance.

The Bicycle Industry.

(a) If the Industry is ever to compete successfully at a later stage with foreign cycles, it must lessen its reliance on imported raw materials, ready parts and accessories.

(b) The industry should take positive steps to establish manufacturing facilities in the Province for the procurement of raw materials, ready parts and accessories.

(c) We suggest modifications in the designs and the manufacturing technique, wherever compatible, of the cycles manufactured by the industry in order to make the maximum employment of the raw materials available in India.

(d) The manufacture of a few of the simpler parts and accessories should be de-centralised and the three Indian assembly plants should only undertake the manufacture of those parts, for which they are adequately equipped. If the Provincial firm carries out these proposals, Government should render it all the assistance required.

(e) Government would be required to grant facilities for the imports of specialised foreign plant and machinery required by the industry.

(f) We recommend to Government the industry's claim for the quantitative restriction of imports of cycles to the extent of the demand supplied by the Indian industry, provided the machines produced locally are of an approved standard.

(g) The industry's case for protection, should be favourably considered by the Tariff Board.

(h) For the future, the Provincial firm should, as far as possible, concentrate on reducing its excessive reliance on imports for supplies of materials, etc. rather than go in for an expansion of production capacity.

(i) There is room for further expansion of the industry in the Province.

The Radio Industry.

(a) If India is to become radio conscious, the masses must be provided with low-powered, single band, medium—wave receivers, which would efficiently “catch” the local stations serving a particular area.

(b) We recommend the early establishment of radio industry in the Province manufacturing, in the beginning, low-powered local reception sets.

(c) To make the industry successful, Government must carry out extensive electrification of the Province and also link some of the important district and commercial towns by a net-work of adequately powered transmitters. In this connection, Government should acquire, if possible some of the transmitters installed in India, during the war, by the defence forces.

(d) The power of the Bombay station of the AIR should be raised to at least 100 KW.

(e) To achieve success, the industry must sell these local reception radio sets at about Rs. 70 per unit.

(f) The organisation of the industry should be on a mass production basis. For systematic, and economic development, production should be specialised, by which each firm manufactures not more than a few types of radio components.

(g) The co-operation of foreign well-established manufacturers is advisable.

(h) Government should grant facilities to the industry for the rapid imports of plant and machinery.

(i) Government should make available to the industry, at low prices all those materials available in India.

(j) Government should lower custom duties substantially on components required to be imported.

(k) We recommend to Government the installation of pre-tuned, single band, 5-7 valve set in each village in the Province.

The Refrigeration (Electrical) Industry.

(a) The Refrigeration industry should be established as a subsidiary to an existing manufacturing industry.

(b) The industry would require a strong dose of protection for development.

(c) Government should render all facilities for imports of plant and machinery and also for imports of chemicals, insulating materials and porcelain finishes. Such imports should be free of duties or at nominal rates of duties.

(d) The best type of organisation for the industry is large-scale.

(e) The industry should be located in a large consuming centre like Bombay City.

The Scientific and Surgical Instruments Industry.

- (a) Government should grant import licences for raw materials required by the industry, even if these are to be purchased from non-sterling areas.
- (b) A small test house should be set up by Government without delay for the purpose of assisting manufacturers in turning out standardised quality products.
- (c) Government should appoint a well qualified expert as the head of the proposed test house to give technical guidance to the industry.
- (d) Government should grant all facilities for the imports of new plant and equipment.
- (e) Bombay City would be the best site for the development of the Industry.
- (f) Government should grant the industry all facilities for exports to establish foreign market.
- (g) Government should control the quality of goods which are exported to foreign markets.
- (h) The case for the grant of protection to those products of the industry, which are or could be manufactured in the country, in sufficient numbers, and are or would be comparable in quality and precision with imported products, should be considered by Government.
- (i) Government should grant scholarships, for training abroad, to technicians selected by the industry.
- (j) Government should depute for training abroad two technicians familiar with the local conditions of manufacture in this country, who, on their return, should be attached to the Department of Industries.

The Agricultural Implements Industry.

- (a) There is an absolute necessity of replacing wooden ploughs by improved iron ploughs.
- (b) Government should formulate a scheme for assisting farmers in purchasing improved iron ploughs if the industry is unable to sell them at low prices.
- (c) We recommend to Government to publicise the advantages of improved iron ploughs as extensively as possible.
- (d) All specifications and designs of ploughs must give considerable importance to the resistance of the different types of soils, the drawing capacity of the various types of cattle and the climate in which agricultural operations are to be carried on.
- (e) We recommend that not only should railway freight rates on improved iron ploughs be reduced but that in the case of all agricultural implements and machinery transported to backward agricultural areas freight rates should be nominal.
- (f) Government must ensure a timely movement of agricultural implements, so that they reach farmers when most needed during particular seasons.
- (g) There is a need for the establishment in the Province, one or more factories, specialised in the manufacture of improved iron ploughs. The proposed units should be on an up-to-date modern basis.

(h) Manufacturing operations should be on a large scale basis and foundries should be mechanised to secure economies of production.

(i) The manufacture in the near future of a varieties of other agricultural implements, particularly the tractor plough, should be considered.

The Wagon Building Industry.

(a) The building of wagons should immediately be undertaken in the Province.

(b) The manufacturing organisation should be on a large scale basis for lower costs.

(c) The industry should either be worked by a specialised factory or should be taken up by one of the large scale general and structural engineering firms with considerable alterations in lay-out to suit manufacturing requirements.

(d) We recommend that the quickest and the best method of building wagons would be to organise the manufacture of various components and structural engineering parts in the existing general and structural engineering factories, which should then be assembled in an entirely separate unit. This unit should either be owned by private enterprise or by Government. We recommend Manmad Junction as the best suitable location for this assembling unit.

(e) If the industry is established in the Province, Government must make sure that it obtains all raw materials at competitive prices.

(f) Government guarantee to purchase all railway requirements of wagons from the industry will be necessary.

(g) The vital nature of the industry will require reduction in freight rates on materials railed from Calcutta to Bombay, and in custom duties on imported materials and component parts.

The Structural Engineering Industry.

(a) To get the maximum output from the industry, Government must see that imports of structural engineering materials are restricted, that the price of steel is kept low, that all Government orders are placed locally and that war disposals of structural fabrications are controlled.

(b) The British structural engineering firms in the Province should increasingly associate Indian finance and Indian control in their management. Government should take some positive steps in this matter.

(c) Government must facilitate the imports of plant and equipment required by the industry from countries outside the sterling area.

The General Engineering Industry.

(a) We recommend to Government the establishment of a Test House in Bombay City for undertaking tests on all types of iron and steel castings produced in the Province.

(b) Each foundry must be equipped with necessary facilities to undertake some form of elementary research metallurgical control and control over sand contamination.

(c) We recommend a high degree of specialisation by which only a few concerns would undertake foundry practice and specialise in this work.

(d) We recommend a considerable degree of mechanization of specialised foundries to reduce moulding charges, handling time, etc.

(e) Government must take positive steps to procure good quality pig iron for the Provincial foundries.

(f) We recommend to Government the payment of a grant for the establishment of a suitable metallurgical degree course by the Bombay University.

(g) Foundry occupation should be made progressively attractive by paying proper wages and providing better condition of service.

(h) The production of steel castings in the Province should be increased to meet the demand likely to be set up by large scale industrial development.

(i) The capacity of forging work undertaken in the Province should also be increased.

(j) We recommend that Government should restrict the imports of such simple textile machinery spare parts as are being manufactured locally of an improved quality.

The Miscellaneous Products Manufacturing Industry.

(a) All the Provincial cans and containers manufacturers, excepting the Metal Box Company, and the oil companies are recommended the purchase of new automatic plant and equipment suitable for mass production.

(b) The development of Metal Cans and Drums Industry in India is necessary. As such it should be desirable if the principal foreign oil distributing companies operating in India ceased to manufacture in India their requirements of cans and containers and instead purchased these products from Indian civilian manufacturers.

(c) We recommend that Government should take positive steps to prevail upon the Metal Box Co. (India), Ltd., to associate Indian finance and control in its management.

(d) For the present we do not visualise any profitable expansion in the industry manufacturing cans and containers for foods beyond the output turned out by the existing firms. We, however, recommend that when there is a worthwhile demand the question of recognising the production of these products and encouraging other manufacturers to enter this manufacturing line should closely engage the attention of Government.

Metal Cutting Tools.

(e) We recommend that manufacturers of metal cutting tools should possess grinding and heat treatment plant of the latest design and precision testing and measuring instruments.

(f) We consider that there is need in the Province for a specialised plant which should undertake on a large-scale the manufacture of all types of metal cutting tools and particularly such tools as cutters, drills and reamers. The plant should be equipped with the latest machinery and detailed attention should be given to the heat treatment aspect of the production.

(g) Once quality metal cutting tools are manufactured, we recommend that Government should put into force some form of licensing scheme to restrict the imports of such metal cutting tools as are manufactured in India.

Clocks.

(h) Government should closely examine the question of imports of raw materials required by this industry and the import duty levied on them with a view to rendering some valuable aid to the industry by reducing custom duties on such imports and making available to the industry the right type of raw materials.

(i) There is definitely a room for further expansion in this manufacturing line in the Province.

Paper Clips and Panel Pins.

(j) Government should look into the question of supplying to this industry an improved quality of wire at a fair price.

(k) We recommend a considerable expansion in the production of panel pins in the Province. Government should encourage the imports of the requisite machinery from abroad or encourage its manufacture locally.

(l) Government should give special attention to the development of these two minor industries in the Province on a cottage scale basis.

Metal Toys.

(m) We recommend that Government should organise the Metal Toys Industry in the Province on a cottage-scale co-operative basis.

(n) To carry out this recommendation effectively we recommend that Government should immediately appoint a well qualified special officer to organise this industry, look after its welfare and plan its production and marketing with a view to achieving the maximum economies of production.

(o) Government should consider the desirability of paying a subsidy to the Bombay Society of Model Engineers for the training of artisans in the manufacture of toys requiring skill.

PART II**The Decentralisation of Industry.**

(a) The ideal principle to be achieved when planning the large-scale industrialisation of the Province is to disperse industries in such a manner that industrial occupations and exploitation of resources are not concentrated in any one area.

(b) Government should take immediate steps to make suitable sites located in the Province attractive for the location of industries. Once this is done, Government should intervene in the question of locating new industries with a view to achieving an ideal dispersal of industrial activity.

(c) In the dispersal of industries, Government should pay attention to the question of developing rural areas.

(d) We recommend a vast improvement, in backward areas, of such facilities as public health, sanitation, transport, education, power resources, easy availability of land, etc., to attract industries. Government are advised against the taking of any hasty steps to compel new industries to operate in backward areas before they are developed.

Mineral Resources.

(a) If Bombay Province is to make any industrial progress in the future new sources of supply of coal must be located within its borders or in areas adjacent to it.

(b) Reserves of cooking coal should be preserved for metallurgical requirements and the Railway Board should equip all locomotives with suitable equipment to burn coal of low quality.

(c) Government should carefully investigate the iron ore deposits known to be located in the Province at Redi, near Vengurla, in South Ratnagiri district and at Banda in Sawantwadi State.

(d) Government should undertake jointly, with the Central Provinces Government, a survey of the iron ore areas of the Central Provinces, with a view to finding new sources of ore supplies which could be profitably exploited by an iron and steel industry established in Bombay Province or in the Central Provinces.

(e) The Provincial Government should immediately undertake a comprehensive Geological Survey of the Province to supplement the efforts of the Central Government. To carry out this scheme, Government should engage experienced geologists, who should be permanently attached to Government.

Electric Power Development.

(a) Government should undertake without delay a Provincial Hydrographic Survey.

(b) If new water power resources are located, capable of being successfully harnessed, Government should consider the question of undertaking the establishment of hydro-electric works, particularly in those areas in which natural resources are available.

(c) Government should give active consideration to the development of the Koyna River Hydro-Electric Scheme in as short a time as possible.

(d) Government should place the development of other hydro-electric schemes in the forefront of their post-war development plans.

(e) Government should take steps to supply additional electric power to industries located in Bombay City and Suburbs.

(f) If additional electric power is still reserved for essential defence purposes, we strongly recommend that Government should release immediately the quantity of electric power so reserved for industrial requirements.

Road and Rail Transport.

(a) Government must execute the Provincial Road Plan without delay.

(b) A widespread use of motor transport will provide a faster and efficient system of transport preserving the surface of the roads.

(c) Government should give every encouragement to the extensive development of motor services throughout the Province.

(d) In addition to putting into service more freight cars, we recommend that the speed of goods train services should be accelerated to secure speedy despatch of goods.

(e) The systematisation of transport under the road-rail co-ordination scheme would be beneficial to Provincial industries.

Railway Rates Policy.

(a) The power possessed by Indian railway systems to alter minimum and maximum rates requires a close examination by Government without delay.

(b) Internal traffic should be rated on the same basis as the rating of traffic of the same class travelling to and fro ports.

(c) We recommend the introduction of the system of uniform and telescopic rates with one rate being charged for the entire distance.

(d) We recommend that consignment should be made to pay lesser freight charges per mile as the distance increases.

(e) As far as possible special rates should be granted to basic and key industries. New industries which are recommended for establishment in the Province should be also quoted special rates especially in the initial stages of development.

(f) Government should immediately appoint an expert committee to examine entire problem of railway rates and to recommend the most suitable manner by which the railway rates structure could be revised so as to foster the development of Indian industries in the future. There should be some representation of Provincial industrialists on the committee.

Industrial Research.

(a) Until such time as research and testing are undertaken by private business houses, Government should take positive steps for the establishment in Bombay Province of some research institutes, laboratories and test houses, which would undertake extensive research work on industrial raw materials, products and processes of manufacture.

(b) Government should favourably consider all schemes coming from business houses proposing the establishment of research and test houses and should give them not only facilities but also provide them with capital whenever required.

(c) We recommend that the Provincial Test House proposed to be established at Poona by Government should be a central organisation for the Province co-ordinating the work of Provincial pilot plants and subsidiary test and research houses.

(d) We recommend to Government the establishment in the Province, on a small commercial scale, of a number of pilot plants working on various untried manufacturing fields which would undertake commercial tests and pass on the industrial experience acquired to industrialists planning to establish industries.

Statistics.

(a) We feel that the immediate need in the country is for the establishment of a Central Statistical Officer by the Government of India.

(b) We recommend the immediate establishment in the Province of a comprehensive statistical organisation very well staffed and under a separate Director, which should carry out statistical analysis of facts in which the Province is vitally interested.

II—SUMMARY OF THE MAIN RECOMMENDATIONS OF THE CHEMICAL INDUSTRIES SUB-COMMITTEE.

1. Sulphuric Acid and its Derivatives.

(i) *Raw Materials.*—Raw sulphur will have to be imported. Methods for the utilisation of indigenous pyrites and sulphur bearing ore could be developed. Bauxite and other raw materials for sulphates are available.

(ii) *Target of Production.*—

Name of the Material.	Target. Tons.
1. Sulphuric Acid	52,500
2. Nitric Acid	6,500
3. Hydrochloric Acid	3,000
4. Acetic Acid	1,925
5. Oxalic Acid	100
6. Ferric Alum	3,000
7. Aluminium Sulphate	5,000
8. Potash Alum	1,100
9. Epsom Salts	1,500
10. Ferrous Sulphate	1,500
11. Copper Sulphate	1,000
12. Sodium Sulphate	6,000
13. Zinc Chloride	} 1,000
14. Zinc Sulphate	
15. Superphosphates	25,000

(iii) *Organisation of the Industry.*—The industry should be organised by private capital. Government should support it by providing facilities and help whenever necessary.

(iv) *Specific Recommendations.*—The Committee recommend :—

(a) That expansion of the industry and new plants of sulphuric acid may be permitted to be installed on the most efficient and modern basis of equipment. Contact process acid plants producing 25 tons per day of sulphuric acid, should be considered economic units of production as far as new installations are concerned.

(b) That the Lead Chamber Plants in operation in the Province be scrapped and their production be substituted by contact acid manufacture, wherever economically possible.

(c) That in view of the proximity of consuming industries, places near Bombay and Ahmedabad are suitable locations for the further expansion of the industry.

(d) That the rayon and dyestuffs industries, if and when installed in the Province, should manufacture their own requirements of this acid at their sites.

(e) That the latest methods of utilising gypsum for the manufacture of the acid, thus making the industry independent of imported sulphur, be adopted if economical as and when the results of the working of this process are made available by the experimental plant suggested to be put up by the Government of India.

II. Alkali and Chlorine Products.

(i) *Raw Materials.*—Brine is the starting material for electrolytic caustic soda. The other important factor is electrical energy, as it is consumed in large quantities.

(ii) *Target of Production.*—

Name of Chemical.				Target. Tons.
1.	Soda Ash	...	...	41,000
2.	Sodium Bicarbonate	...	...	2,000
3.	Caustic Soda	...	...	31,000 (20,000 by Electrolytic process and 11,000 by causticisation).
4.	Chlorine (liquid compressed)..	...	...	17,500
5.	Bleaching Powder	...	...	6,000
6.	Calcium and Sodium Hypochlorites	...	...	5,000 (in terms of 30 per cent. chlorine).
7.	Sodium Chlorate	...	...	1,500
8.	Potassium Chlorate	...	...	2,000
9.	Caustic Potash	...	...	1,500
10.	Potassium Carbonate	...	...	6,500 (2,000 for Caustic Potash).

(iii) *Organisation of the Industry.*—The industry should be allowed to be developed by private capital. Its claims to Government protection should be favourably considered.

(iv) *Specific Recommendations.*—

(a) The Province must be made self-sufficient with regard to these chemicals.

(b) Bombay and suburbs are suitable locations for this industry in view of very favourable conditions in respect of cheap electricity, availability of salt and market.

(c) Common salt should be provided at a duty-free rate. Manufacture of salt of purity required by these industries should be encouraged.

III. Other Heavy Chemicals.

(i) *Raw Materials*.—All the raw materials for the products in this section are available in the Province.

(ii) *Target of Production*.—

Name of Chemical.		Target.
		Tons.
1.	Sodium Bichromate	2,000
2.	Potassium Bichromate	60
3.	Sodium Silicate	8,000
4.	Sodium Sulphide	4,000
5.	Potassium Chloride	3,000
6.	Magnesium Chloride	8,000
7.	Calcium Chloride	3,000
8.	Ammonia (Liquor)	100
9.	Ammonia Anhydrous	4,350
10.	Sodium Hydrosulphite	1,500
11.	Sodium Sulphite	150
12.	Sodium Bisulphite	600
13.	Sodium Thiosulphate	600

(iii) *Organisation of the Industry*.—To be organised by private capital.

(iv) *Specific Recommendations*.—

(a) Complete stoppage of imports of bichromates, chromates, chrome products and sodium silicate is recommended.

(b) Encouragement should be given for the production of sodium sulphide from sodium sulphate.

IV. Industrial Gases.

(i) *Raw Materials*.—The gases hydrogen and oxygen can be produced by the electrolysis of water. Oxygen is also obtained as a by-product at hydrogenation of oil plants.

(ii) *Target of Production*.—No recommendations can be made at this stage.

(iii) *Organisation of Industry*.—By private enterprise.

(iv) *Specific Recommendations*.—Nil.

V. Inorganic Fine Chemicals.

Most of the recommendations are covered in the first four sections.

VI. Organic Fine Chemicals.

(i) *Raw Materials*.—Ethyl Alcohol is mostly produced by the fermentation process and should be available in good quantities.

(ii) *Target of Production*.—

Name of Chemical.	Target.
1. Acetic Acid.	500 tons.
2. Ethyl Alcohol	1,000,000 gallons.
3. Methyl Alcohol	200,000 „
4. Ether	600,000 lbs.
5. Carbon Tetrachloride	1,000 tons.

(iii) *Organisation of Industry*.—By private industrialists.

(iv) *Specific Recommendations* :—

(a) Bombay, Baroda and Ahmedabad are recommended as suitable places for plants producing organic fine chemicals.

(b) Alcohol manufacture should be carried out in the vicinity of centres of molasses and mowhra flower production in the Province.

VII. Drugs and Pharmaceuticals.

(i) *Raw Materials*.—For liver products the raw materials are fresh liver and glands which are obtainable from the slaughter house at Bombay. As regards drugs, obtainable from vegetable sources, the Province is not favourably situated. Starting material for the production of sulphha and allied drugs would be easily available when the dyestuffs industry, recommended to be put up at Bombay, is installed.

(ii) *Target of Production* :—

Name of Drug.	Target.
1. Sulpha Drugs	200,000 lbs.
2. Synthetic Antimalarials	75,000 lbs.
3. Penicilin	250,000 million units.
4. Arsenicals	25,000 lbs.
5. D. D. T.	5,000 tons. (To be doubled later).
6. Nicotinic Acid	15,000 lbs.

(iii) *Organisation of the Industry*.—By private capital.

(iv) *Specific Recommendations* :—

(a) Modernisation of slaughter houses is considered essential for putting the liver products manufacture on a sound basis.

(b) The shark liver oil industry should be given every assistance to expand.

VIII. Photographic Chemicals.

(i) *Raw Materials*.—Most of the organic and inorganic fine chemicals form the starting materials for the manufacture of this group of chemicals.

(ii) *Target of Planned Production* :—

The targets of important chemicals used for photography are given in chapter on fine chemicals.

(iii) *Organisation of the Industry*.—By private capital.

(iv) *Recommendations*.—A nucleus for the production of these chemicals already exists in Bombay. This factory should be encouraged to manufacture all the chemicals required for use in the Province.

IX. Textile Chemicals.

(i) *Raw Materials*.—Most of the heavy inorganic chemicals are already discussed in a previous section. Starch is generally processed from maize obtainable in the Province.

(ii) *Target of Planned Production*.—No specific targets are fixed.

(iii) *Organisation of Industry*.—By private capital.

(iv) *Specific Recommendations* :—

(a) Cultivation of maize from best quality seed should be undertaken and encouraged by the Department of Agriculture for the manufacture of starch, to enable the industry to compete with imported products.

(b) Extensive research should be undertaken to develop other sources of starting materials for the production of starch.

X. Coal Gas and Coal Tar Products.

(i) *Raw Materials*.—Coal which forms the starting material for all the products is imported in the Province from other Provinces.

(ii) *Target of Production* :—

Name of Product.	Target.
Coal Gas	5,200 million c. ft.
Gas Coke	160,000 tons.
Coal Tar	14,000 „
Distillate oils	500 „

(iii) *Organisation of the Industry*.—Public Limited Companies.

(iv) *Specific Recommendations*.—Bombay, Ahmedabad, Surat, Poona and Sholapur are suggested as suitable sites for location of coal gas plants in view of their consuming capacities.

XI. Destructive Distillation of Wood.

(i) *Raw Materials*.—Hardwood, which is available from the forests of the Province.

(ii) *Target of Production*.—In the initial stages a factory distilling 100 to 150 tons per day is suggested to be installed.

(iii) *Organisation of the Industry.*—By private capital, subject to Government supervision as regards the conservation of forests.

(iv) *Specific Recommendations.*—Two possible locations are indicated for the industry, one which can be supplied by wood from forest of North Kanara; the other near Billimora in Gujarat.

XII. Dyestuffs Industry.

(i) *Raw Materials.*—A number of inorganic chemicals is required in the manufacture of this industry. Many of these with the exception of sulphur would be available in the Province when the suggested programme of development of chemical industry comes into operation. Of the necessary organic chemicals methyl alcohol, acetic acid, benzene and some of their derivatives would be available in the Province. The rest of the organic chemicals would have to be imported from outside.

(ii) *Target of Production.*—The immediate target is fixed at 6,500 tons of dyestuffs to be produced annually.

(iii) *Organisation of the Industry.*—By private capital, subject to necessary supervision in respect of quality.

(iv) *Specific Recommendations.*—Bombay is suggested as a suitable site for this industry.

XIII. Petroleum Refining Industry.

(i) *Raw Materials.*—The crude oil to be refined can be obtained from countries along side the West coast of India such as Persia, Bahrein, etc.

(ii) *Target of Production.*—About $\frac{1}{2}$ million tons of crude oil might be distilled annually in the beginning.

(iii) *Organisation of the Industry.*—By private capital.

(iv) *Specific Recommendations.*—Nil.

XIV. Glass Industry.

(i) *Raw Materials.*—Of the necessary raw materials, lime is available in plenty in the Province and soda ash is marketed through imported agencies. Silica of the requisite quality not being available has to be imported from the United Provinces or Nizam's Dominions.

(ii) *Target of Production.*—The target indicated for sheet glass plant is 6,000 tons per year.

(iii) *Organisation of the Industry.*—The industry should be organised by private enterprise and the Government should provide necessary facilities to transport and import machinery.

(iv) *Specific Recommendations :—*

(a) The Committee recommend that the production of bangles should be increased so as to make the Province self-sufficient.

(b) Soda ash should be permitted to be transported to Bombay by sea-route from the inland centres of production.

(c) The Committee recommend that a factory handling about 20 tons of sheet glass per day should be put up in the Province to meet the demands of the tremendous building activity. Bombay is considered a suitable location for the proposed factory.

XV. Potteries, Ceramics, and Refractories Industry.

(i) *Raw Materials*.—From the information that is available there is an abundance in the Province of various kinds of raw materials used in pottery.

(ii) *Target of Production*.—In view of the likely increase in building activity and expansion in the markets for household pottery ware, the Sub-Committee recommend that the production of the following products may be permitted to the extent mentioned against each product :—

Products.	Quantity to be produced per annum.
1. Sanitary Wares and Fittings—	
Indian W. C. Pans 18", 20", 23", 25", and 27"	Nos. 60,000
'P' traps	" 60,000
'S' traps	" 2,500
Wall and corner urinals	" 4,000
European closets P and S type	" 20,000
Wash basins	" 5,000
" " corner	" 1,000
Laboratory sinks	" 3,000
Half Rond Channels	" 4,000
Stand for wash basins	" 1,000
Foot rests	Pairs 8,000
2. Tiles and Bath-room Fittings—	
White glazed tiles (6" × 8" and 6" × 3 per cent.)	Dozens 800,000
White glazed channels	" 20,000
White glazed cups	" 10,000
White glazed cappings	" 5,000
Non-slips vitreous tiles white	Brass 200
Blue tiles	" 20
Coloured glazed tiles	Dozens 100,000
" " embossed	" 20,000
Coloured channels	" 10,000
Coloured glazed strips	" 10,000

	Products.				Quantity to be produced. per annum.	
3. Hospital Equipment and Sundries—						
Feeding cups	Dozens	1,500
Bed pans	"	100
Mortar and Pestle No. 1, 2, 3, 4, 5 and 6	"	1,000
Porcelain pipes 6", 9", 12" and 15"	"	2,000
Dyeing beakers	"	100
Porcelain pot Byes Dia. 4", 4½", 5" and 6"	"	500
Porcelain thread guides	Gross	2,000
Laboratory chemical wares (crucible and evaporating dishes)	"	1,000
Other porcelain equipment for industries	Tons	100
4. Insulators—						
Insulators	Nos.	1,500,000
5. Refractory goods—						
Fire brieks	"	800,000
Fuel covers	"	2,000
Boiler setting blocks	"	2,000
Arch bricks	"	200,000
Special refractories	Tons.	1,000
Burnt clay powder	"	500
Boiler floats	Dozens	50

Bricks.—The case of bricks in the group of pottery-ware specially calls for attention as these would be required in large quantities for the various construction schemes undertaken by the Government and private enterprise. Most of the present production is centred in Kalyan in Thana District which supplies the needs of building trade in Bombay. Quality of these bricks is such that they cannot be used without being plastered. If better qualities of clays are supplied for bricks, more durable types of bricks can be manufactured and there would be a proportionate saving in the cost of building. It is, therefore, advisable to put up plants with modern equipment producing about 1 crore of bricks per annum as there would be no difficulty in finding ready markets for these. This recommendation is strengthened by the fact that the region round about Bombay alone supplies about 10 crores of bricks per year.

(iii) *Organisation of the Industry.*—By private capital.

(iv) *Specific Recommendations* :—

(a) Geological survey of raw materials.

(b) Cheap power supply.

(c) Cheap transport for raw materials.

(d) Establishment of a Central Research Centre.

XVI. Cement and Cement Products.

- (i) *Raw Materials*.—Lime stone and clay are available in some places in the Province while gypsum will have to be imported from neighbouring Provinces.
- (ii) *Target of Production*.—Portland Cement—560,000 tons.
- (iii) *Organisation of the Industry*.—By sound financial concern.
- (iv) *Specific Recommendations*.—Nil.

XVII. Inedible oils.

- (i) *Raw Materials*.—Some of the inedible oilseeds are available in plenty.
- (ii) *Target of Production*.—Nil.
- (iii) *Organisation of the Industry*.—By private capital.
- (iv) *Specific Recommendations* :—
- (a) Modern processes on which new industries can be started should be encouraged to be undertaken in the existing factories.
- (b) The Government should put up a pilot plant laboratory to keep the industry informed of the latest methods in oil technology.

XVIII. Soap Industry.

(i) *Raw Materials*.—Most of the raw materials excepting oil were up to now imported in the Province.

(ii) *Target of Production* :—

				Initial Stages.	Later stages.
				Tons.	Tons.
(a) Toilet soap	...	...	...	10,000	15,000
(b) Laundry soap		...	...	50,000	80,000

(iii) *Organisation of the Industry*.—The existing factories are sufficiently well-organised to undertake expansion in production.

(iv) *Specific Recommendations*.—Nil.

XIX. Paints and Varnishes.

(i) *Raw Materials*.—The requirements of this industry are so varied that it would be difficult to give a list of the raw materials required.

(ii) *Target of Production*.—The expansion of the following types of paints and pigments is justified in view of the possibilities of increased consumption.

- (a) White pigment.
- (b) Chrome pigment.
- (c) Pigment colours.
- (d) Distempers.
- (e) Nitro-cellulose paints.

(iii) *Organisation of the Industry*.—By private capital.

(iv) *Specific Recommendations*.—Nil.

XX. Aluminium Industry.

(i) *Raw materials*.—Bauxite is the starting material for the production of aluminium. Electrical energy is used in such a big quantity that it can be classified as a necessary raw material. Cryolite will have to be imported from abroad.

(ii) *Target of Production*.—3,000 tons per year.

(iii) *Organisation of the Industry*.—By private enterprise.

(iv) *Specific Recommendations* :—

(a) The Committee are of the opinion that a site near Kalyan affords great facilities for putting up a factory producing mettalic aluminium.

(b) The Committee recommend that the Government of Bombay should provide for 10,000 kw. electrical power at 0·10 to 0·15 as. per kw.

XXI. Minor Electro-Chemicals.

(i) *Raw materials*.—The raw materials for hydrogen peroxide are a solution of diluted sulphuric acid. Electrical energy plays an important part in the process.

(ii) *Target of Production*.—500 tons of hydrogen peroxide per year.

(iii) *Organisation of the Industry*.—By private capital.

(iv) *Specific Recommendations*.—The hydrogen peroxide plants should be put up side by side with other electro chemical industries.

XXII. Plastics Industry.

(i) *Raw Materials*.—Of the natural plastics, casein is manufactured in the Province by the acid process. Phenol and formaldehyde which form the basic materials for other types of plastics are imported from abroad.

(ii) *Target of Production* :—

	Tons.
(a) Phenol formaldehyde	1,500
(b) Amino formaldehyde...	600
(c) Cellulose acetate	300
(d) Cellulose nitrate	300

(e) Casein—No definite target can be given.

(iii) *Organisation of the Industry*.—By private capital.

(iv) *Specific Recommendations* :—

(a) Facilities for the imports of machinery should be made available to the industries.

(b) Protection should be granted to the moulding powder manufacture by restricting imports or by introduction of Tariff duties.

General Recommendations.

1. It is recommended that the Geological survey and forest survey of the resources entering into the chemical industry should be undertaken by the Government.

2. It is recommended that more intimate contacts between the chemical Research Laboratories of the Province and the industrialists should be established in the interests of progress of the industry in the Province.

3. It is recommended that a "Permanent Provincial Advisory Committee for Chemical Industries" be appointed by the Government of Bombay.

III SUMMARY OF THE MAIN RECOMMENDATIONS OF THE FOOD AND FOREST INDUSTRIES SUB-COMMITTEE.

Foodstuff.

1. Among the foodgrains, the deficit is chiefly of rice which cannot be substituted by any other grain. Production of more rice should, therefore, be stimulated.
2. Necessary arrangements should be made for growing various pulses on a large scale.
3. The area under groundnut should be increased immediately as far as possible.
4. The deficit of fruit and vegetables is considerably high in Bombay Province. Vigorous attempts should, therefore, be made to meet this shortage.
5. The Bombay Province is singularly deficit in milk. It is, therefore, recommended that the production should be increased at least twofold.

Canned Foodstuff.

1. Many more factories should be started in Bombay Province within a radius of 100 miles of the fruit growing areas.
2. Food canning machinery and other accessories should be allowed to be imported free of duty or a refund of import duty may be allowed to the canning factory owners.
3. Reasonable subsidy should be given by the Government to those factory owners who comply with the conditions laid down by the Government.
4. The Bombay Government should try to establish a food canning research station in this Province.

Processed Foodstuff.

Bakeries.

1. The bakers should be encouraged to install modern machinery and they should operate their bakeries on scientific and hygienic lines.
2. Government should start bakery schools for training bakers.
3. Bakeries should be located near the big cities at a central place but not in thickly populated areas nor in mill and workshop localities.

Biscuits.

1. More biscuit factories should be started in this Province.
2. This industry should be allowed to export a certain percentage of its production.
3. The inter-provincial restrictions on exports and imports should be immediately removed.
4. Sufficient sugar and other commodities should be made available to this industry.

Chocolate and Cocoa.

1. Plantation of cocoa trees has recently been started by the Forest Department of the Government of Bombay. This should be continued on a larger scale.
2. Import duties on raw materials should be removed.
3. There seems to be hardly any scope for more units unless demand is created for such food as is recognised to have a high food value.

Condiments, Curry Powder, Papad, Spices, etc.

1. The raw materials required for this industry are available in the Province. The speculative tendency of the market should be checked.
2. Equipment is already available and factories with the required hygienic standard are already in existence in Bombay. These are now almost idle and may be switched on for civil production.

Cereal Foods.

1. Liberal supplies of raw materials such as rice, paddy, wheat flour and pulses are necessary.
2. Protective duty on wheat flakes, corn flakes, rolled oats, etc., and special packing timbers, should be levied.
3. Permission may be given to manufacture mild liquors, such as beer, etc.
4. Licence for importing machinery for germoil (good patent source of Vitamin E) should be granted.

Sugar Confectionery.

1. Additional factories with a capacity of about 5 tons per day should be licenced in the Province for the manufacture of confectionery. The factories so licenced may be required to comply with the standards of hygiene on the lines of the fruit products orders and also with proper standards of quality, purity and efficiency.
2. The plant and machinery required by the industries should be allowed to be imported duty free.
 - i. The existing import duty on confectionery may be increased.
4. Sugar should be made available for this industry at the price at which it is available for the industry in other countries.

General Recommendations.

1. A Food Act should be immediately passed.
2. Training centres for training labour for the food industry should be started.
3. A food research laboratory should be started either in Poona or in Bombay.
4. A permanent Panel for the food industries should be immediately set up.

Flour, Dal and Rice—Milling

Flour Mills.

1. Mobilisation of milling industry in the Province is necessary.
2. 'Atta' of a standard quality should be produced under hygienic conditions out of cleaned and washed wheat like the "National Flour" of the United Kingdom.
3. Import duty on foreign flour should be increased to protect the industry from foreign competition.

Dal Mills.

The existing 'dal' factories with modern equipment should be given due help.

Rice Mills.

1. Rice pounding should be done in such a way that the outer layer of the rice grain is preserved as far as possible so that the Vitamin B Complex is retained.
2. Researches should be carried out to make use of the husk for the preparation of straw, paper and insulation boards for various purposes.

Vegetable (Edible) Oils ; Vegetable Ghee etc.

Edible oils.

1. For the promotion of oil industries it is necessary—
 - (a) to increase the acreage under oil-seed,
 - (b) to increase the yield per acre,
 - (c) to increase the yield of oil per ton of seed, and,
 - (d) to tap unexploited resources.
2. New oil mills should be started and/or existing ones should be expanded and modern equipment should be used.
3. Facilities for the storage of oil and seed and filtration of oil should be provided.
4. Modern decortication machinery should be installed to remove the husks from groundnut. The husk is at present used as fuel. Instead of generating power by burning husk, cheap electric power should be made available and the material could be used for the preparation of card-boards, insulation boards, etc., after conducting research for its utilisation.

Vegetable Ghee.

The capacity of this industry should be increased.

Sugar and Power Alcohol.

1. Work pertaining to the irrigation schemes of the Post-War Planning Committee of the Public Works Department should be taken in hand at an early date.
2. While making a survey of an irrigation scheme, the Government should advise the Public Works Department authorities to classify suitable lands for fruits, foods crops, etc. in order to plan cultivation.

3. The Government of Bombay should have a cane research station of their own.

4. A fertiliser factory or factories should be started. Facilities for the transport of raw materials as well as finished material should be given.

5. According to the recommendations of the Government of India, Sugar Cane Panel, the existing sugar factories having a production capacity between 300 to 800 tons should be allowed to expand so that their capacity reaches 800 tons.

6. Proper facilities should be given by the Government for training technical personnel for sugar industry in the Province.

7. A new central distillery should be started and by-products should be made or recovered.

8. A permanent panel of industrialists, businessmen and technical experts should be set up.

Pulp and Paper.

1. In the first place the production of the paper factories in the Province should be increased to their capacity.

2. Due encouragement should be given to hand-made paper centres to make pulp from rags.

3. Different cellulose industries should be started in the Province and the manufacture of bamboo pulp, rayon and plastics should be encouraged.

4. Development of the industry should be left to private enterprise, but all necessary assistance should be given by Government. A permanent panel consisting of the representatives of the Industries and Forest Departments, experts, representatives of industry and the paper trade should be set up to promote the development of the cellulose industry. Protective duty should be levied on all varieties of imported paper.

5. A research laboratory called "The National Cellulose Research Institute" should be started in the Province.

Match.

1. The present supply of wood in India is not sufficient for the industry and it is necessary to increase the sustained yield by means of plantations of species suitable for the match industry.

2. All Sawar and Simal growing on Government land should be reserved for the match industry and supplied at reasonable rates.

3. Government should assist the industry in importing material necessary for the manufacture of matches.

4. Waste in manufacture should be prevented and if necessary, with Government assistance.

5. With Government assistance, licences from U. S. A. should be obtained for Indian manufacturers to manufacture everlasting matches.

6. The manufacture of chemicals and other materials such as glue, potash and red amorphous phosphorus in the Province should be increased.

7. The excise duty should be such that maximum benefit accrues to the public with the minimum loss to the Indian section of the industry.

Tanning Material ; Wood Distillation, etc.

Tanning Material.

1. An organisation for the production and advancement of the industry should be set up.
2. The possibility of starting plantations of wattle and other trees should be explored.
3. Research work in the production of tanning extracts should be carried out by Government.
4. Private enterprise should be encouraged to start the industry.

Dry-wood Distillation.

1. The industry should be established in the Province immediately, and, if necessary, with participation by Government.
2. The resources of the Panch Mahals, Surat, Thana, and Kanara Districts should be surveyed.

Charcoal Manufacture

1. Government should plan for the production and import of sufficient charcoal, to meet the requirements of the Province. Plantations of trees suitable for charcoal manufacture should be undertaken if necessary.
2. Efficient methods of charcoal manufacture should be introduced.
3. To ease charcoal situation more charcoal gas and electricity should be produced and supplied in Bombay City and early action is necessary as otherwise the position after a few years will be very serious.

Essential Oils.

The recommendations made by the Essential Oils Committee of the Government of India should be given effect to, especially with regard to Rosha, Cinnamon and Sandalwood oils.

Drugs.

Government should take immediate steps for survey, identification, analysis, selection and cultivation of drug plants.

Wood-working ; Plywood and Allied Industries.

Saw-Milling.

1. Facilities should be given for starting wood-working industries in the Districts of the Province having large forests.
2. Investigations should be carried out regarding suitable centres for the establishment of saw-milling industry.
3. The existing saw-mills should be expanded and seasoning kilns should be installed.
4. The coastal areas should be served by railways connecting with the interior.
5. Necessary transport and other facilities should be given to the existing factories and concerns.
6. Training centres for turning out highly qualified saw operators and engineers should be started.

Bobbins.

1. New bobbin factories should be started and the existing ones expanded to their maximum capacity and adequate protection should be given to the industry.
2. Hard heat-resisting paints should be manufactured and until this is done, facilities should be given to the manufacturers to import paints and varnishes and other chemicals from foreign countries, free of duty.

Shuttles.

1. Facilities should be given by Government for the expansion of the existing factories.
2. There is a vast scope for starting new factories provided Cornell wood blocks can be imported in sufficient quantities from the U. S. A.
3. Power should be made available to the industry.

Furniture, Doors and Windows.

1. Private enterprise should be encouraged to start new factories and the existing ones should be expanded.
2. Well-seasoned Kanara teak should be made available by Forest Department at reasonable prices.
3. The industry should be protected against foreign competition.

Wooden Toys.

1. Facilities should be given to toy manufacturers to import, free of duty, cellulose and other paints, dope, etc.
2. Timber such as Haldu and Kalam which having a fine grain is easy to work should be made available by the Government to the toy manufacturers at reasonable rates.

Miscellaneous Wooden Articles.

Well seasoned timber particularly Kanara teak should be made available by the Forest Department in required sizes at reasonable rates.

Plywood.

1. The existing two factories of plywood should be operated on sound lines and the production should be raised to capacity.
2. An additional factory should be started by private enterprise on the Kanara coast and the necessary concessions should be given to it.
3. The industry should be protected to withstand foreign competition so that its products could compete with imported plywood, laminated boards, masonite and other hard and soft boards.

Tool Handles.

The industry should be carried out on a cottage scale.

Wooden Shipbuilding.

1. Government should render every possible assistance to the industry.
2. Centres should be started for training carpenters required for ship building and better transport facilities should be provided.

IV—SUMMARY OF THE MAIN RECOMMENDATIONS OF THE TEXTILE INDUSTRIES SUB-COMMITTEE.

General.—The development of the textile industry in Bombay Province specially with regard to cotton textiles is far in advance of the rest of India. This has come about by a natural growth of industry which started in Bombay City in 1854. There is justification for expanding the output of cotton textiles; such expansion is an important necessity. The present standard of wages is low compared to that of workers in more advanced industrial countries and at the same time production per man-hour is also much lower. It is therefore essential that the industry should be rationalised to the greatest extent possible, if its output is to be maintained and increased and if labour is to obtain the high standard of living it desires. The purpose of rationalisation, however, must not only be to raise wages of workmen, but also to reduce the cost of production. As rationalisation may, however, lead to the reduction of the number of workers employed, it must take place side by side with the general expansion of the industry, if full employment is to be ensured. If, however, in spite of the expansion which is proposed, there is likely to be to some extent a small reduction in the number employed, these men will have to be absorbed in other new industries. There is no objection, to the legitimate rights of the other Provinces to develop the cotton textile industry, but it should only be allowed where economical factors are in its favour. The special importance enjoyed by this industry in the Bombay Province must be recognised as the surplus production of cotton textiles is the chief means by which the Province is able to purchase its deficiency in food and is almost the only surplus which the Province has.

I. COTTON TEXTILE INDUSTRY.

1. Power Loom Weaving.

1. It is presumed that it will be one of the objects of the National Government to convert India's raw products into finished articles so that India may no longer be an exporter of raw materials only.

2. If this is applied to the cotton textile industry, then the object will be for the industry to consume all the cotton grown in the country and to export all types of cloth instead of raw cotton. If this is achieved, India will become one of the greatest suppliers of cotton textiles for all markets of the world.

3. Such a development of the industry in other parts of the country will satisfy local demands and make further supplies available for internal consumption. The textile industry in Bombay Province enjoys several advantages in the matter of catering for export markets.

4. It is therefore of vital importance to the economy of this province that the overseas market should be developed especially as Japan is not likely to enter the field for a long time.

5. As demands for cotton textiles from overseas markets are likely to be insatiable for many years to come, the industry has now an opportunity to build up a permanent export trade of between 1,000 and 1,500 million yards per annum. To take the fullest advantage of this opportunity, special officers and/or trade missions should be sent abroad to study the overseas markets and to advise the industry as to what types of textiles would be required from mills in Bombay Province.

6. If the Bombay Province attains figures of 1,250 million yards for export and requires 612,500,000 yards taking 24·5 a year per head of population of 25,000,000 and is further to maintain its supplies to the rest of India at the 1944-45 rate, it will be required to increase the production by 530,500,000 yards.

7. If this expansion is to take place in counts 40s. and finer it will require an expansion of $1\frac{1}{4}$ million spindles and corresponding number of looms viz., 30,000.

8. However, when these mills are to be put up and when orders are booked for replacements, the industry should be recommended to import only the most up-to-date types of machinery capable of maximum output per man-hour.

9. Bombay Province has another unique advantage in as much as it is best suited for the development of fine count industry being the nearest port for the import of foreign long staple cotton and having the most highly skilled textile workers in the country.

10. Every possible assistance and encouragement should be given to the growth of fine staple cottons and greater attention and more funds made available for carrying on the research required.

11. Until India is able to grow even a small portion of her requirements of fine staple cotton, exceeding one inch in staple, the present duty of 2 annas per lb. on imported cottons should be reduced and a rebate on all cloths of fine counts exported from this country be allowed as otherwise, it will be impossible for the Indian Textile Industry to compete with other countries in fine varieties in overseas markets.

12. The expansion and rehabilitation of the country is being seriously delayed due to the difficulty of obtaining new machinery.

13. Steps should therefore be taken immediately to start the manufacture of textile machinery in this country.

14. The machines to be manufactured should be preparatory and spinning machinery of the latest design.

2. Handloom Weaving.

1. Over and above the $1\frac{1}{4}$ million spindles which should be installed for the manufacture of fine count mill made cloth, it is desirable to expand the spinning industry to meet the demands of the handloom Industry.

2. Before the war, the quantity of yarn available for consumption to the Handloom Industry and other civil users of yarn in this country averaged between 350 and 375 million lbs. and though the available supplies now exceed 500 million lbs., complaints continue to come in from handloom weaving districts about shortages.

3. The Fact Finding Committee (Handlooms and Mills) had estimated that about 55 per cent. of the Handloom Industry's requirements consist of counts up to and including 20s., about 20 per cent. between 21s. and 30s. and the balance over 30s.

4. The position has recently changed. The Handloom Industry now requires more fine yarn and the bulk of their requirements would be over 20s. As the number of spindles required to produce a lb. of yarn directly varies with the fineness of the counts, there is a very good case for increasing the number of spindles allotted for the manufacture of yarn to the Handloom Industry.

5. An addition of 350,000 new spindles to meet the requirements of Handloom Industry is therefore recommended.

3. Hosiery.

1. According to the latest available information, there are 18 hosiery factories in the Province, employing about 1,800 operatives.

2. Due to the low price at which Hosiery and Knitting machines were being sold in India in the immediate pre-war period, the Industry seems to have migrated to cottages.

3. Hosiery yarn requires doubling spindles in which class there is a shortage in this country and bearing in mind the need for developing the cottage hosiery industry as a means of augmenting the family income of the private citizens, steps should be taken to increase spinning spindleage and the yarn doubling equipment of the mills.

4. The draft report of the Government of India Penal on Hosiery Industry contains recommendations with regard to expansion which are too ambitious. However, a proportionate increase in the requirements of the Province may be accepted.

4. Finishing, Dyeing and Printing.

1. As the standard of living in the country improves, demand for bleached, dyed and printed varieties of cloth will increase. It is therefore important that the development of this side of industry should keep pace with growing demand for bleached, dyed and printed goods.

2. Mills and groups of Mills should be encouraged to expand their own dyeing and bleaching works.

3. In selecting sites for this industry, attention should be paid to large and cheap supply of water, adequate rail and road communication, nearness to sources of supplies of grey cloth, heavy chemicals and dyes and markets for finished cloth.

4. This section of the industry should not, however, be expected to employ a very large number of workers.

II. RAYON INDUSTRY.

1. With the anticipated rise in the standard of living, more and more rayon goods will be consumed in India. The establishment of 3 factories producing between 5 and 10 tons per day are recommended for the Province.

2. There is a large rayon weaving industry in Bombay Province which should not only be supplied with indigenous rayon yarn, but should be encouraged to expand the production of rayon piece-goods.

3. Special attention is drawn to the difficulties which must be overcome in establishing the industry on a sound basis.

4. Careful planning in the selection of suitable sites is necessary so as to have ample water supplies to avoid unnecessary transport over long distances of large quantities of chemicals and to have facilities for disposing of the affluent.

5. Provided the majority of the heavy chemicals required are likely to be produced in the same areas, the Sub-Committee recommends that the following sites should be investigated for the establishment of the rayon industry :—

- (1) Surat (on bank of river Tapti).
- (2) Kalyan area.
- (3) Patalganga.
- (4) Kundalika.
- (5) Near the Koyna River Project.
- (6) Kalinadi using Karwar as Port.

6. It may be necessary, before a complete survey has been made of the prospects of obtaining raw materials for the manufacture of pulp, to import pulp from abroad. This would ensure rapid establishment of the industry in the Province as considerable research has got to be undertaken before the raw materials in this country can be fully utilised on a commercial basis.

III. WOOLLEN INDUSTRY.

1. So far Bombay Province has developed the manufacture of worsted goods to a much greater extent than the manufacture of woollen goods. By running multiple shifts, a peak figure of over 9 million lbs. of woollen and worsted goods was produced in 1940-41.

2. As it is desirable to maintain this figure for the first 5 post-war years, it is recommended that 10,000 additional spindles should be installed to permit the industry to return to normal one or two shift working,

3. These spindles should be divided as follows :—

Worsted 8,000.

Woollen 2,000.

To assist the hand-woven production of woollen goods in the Province, a further 4,000 spindles should be installed to provide yarn for the Handloom Industry.

4. The possibilities of expanding Woollen Industry in the Province are coupled with the importation of raw wool from abroad.

5. The demands for woollen clothing in this country are likely to be of lighter and finer varieties which can only be made from better qualities of wool which are not readily available in the country.

6. As it may be economical to import fine varieties of wool, especially Merino from Australia, the expansion of the Woollen industry should take place in the vicinity of the Bombay City and should manufacture better qualities of Woollen and worsted cloths only.

7. Raw wool and tops should be exempt from import duties ; and woollen machinery should be admitted duty free.

8. The sheep-breeding centre at Poona should be properly expanded and a thorough survey made with a view to discovering the possibilities of developing the sheep breeding industry in the Province.

V—SUMMARY OF THE MAIN RECOMMENDATIONS OF THE
MISCELLANEOUS INDUSTRIES SUB-COMMITTEE.

PART I.

The Leather and Leather Goods Industries (including the Oil and Leather Cloth Industry).

1. Tanning and Leather Goods industries should be made more attractive to the intelligentsia and the investors.

2. Export of hides and sheep skins outside India should be prohibited. The export of goat skins however, may be permitted to the extent of 30 per cent. only of its pre-war quantity. These restrictions are most essential to satisfy the increasing demand of the tanneries in the Province.

3. Import of raw hides and skins from other Provinces and outside India, should be made easy. Wooden wagons, for transport of raw and wet-salted hides and skins to tanneries, be made available to avoid damage done to them by heat in transit.

4. Government should arrange for the supply of denatured salt to the trade through the agencies connected with the trade.

5. The existing conditions in the slaughter houses should be improved, and flayers therein be (i) trained in modern methods of flaying, (ii) supplied with suitable safety flaying knives, and (iii) licensed so as to prevent bad flaying. Licenses should be made subject to cancellation for continued bad work.

6. The Veterinary Department should (i) carry on propaganda for prevention of damage by ticks and vermins, and (ii) conduct research to eliminate the defects in animals during their life-time.

7. The Agricultural Department should make an enthusiastic propaganda amongst farmers for the elimination of defects such as scar marks, goad marks, etc.

8. Government should set apart pastures for the grazing of cattle to avoid under-nourishment.

9. Demonstration parties should be sent out into villages to instruct village flayers in proper methods of flaying, and traders in the proper method of curing and treatment of hides.

10. Producers' co-operative societies should be started to provide hides and tanning materials to village tanners and to effect sales of their products, with a view to increase the production of bag-tanned leather.

11. Seven more tanneries for pit tanning, each to produce 100 hides a day, should be established in the next five years, to meet the requirements of pit tanned leather in the Province. Places recommended are Ahmedabad, Godhra, Nandurbar, Ahmednagar or Naisk, Sholapur, Satara and Belgaum or Hubli.

12. Four more tanneries, each to produce 200 pieces a day, for the manufacture of box, willow sides and calf, should be established, in the next five years, to meet the requirements of the Province.

13. Eight tanneries, each to produce 500 pieces daily of glace kid, chrome suede and morocco leather, should be established in the next five years.

14. The oil tanning industry should be encouraged, as raw materials viz., heavy goat skins and fish oil, are available in the Province.

15. To stop the over-measurements of leathers, a Leather Measurements Act for the whole of India, should be promulgated by the Central Government.

16. Four machine-operated finishing factories, each with an output of 500 skins and 50 hides a day, be established one in Bombay and the other three, one in each of the three divisions, to meet the requirements of specially dressed leather.

17. Village tanners should be allowed to collect barks and tanning materials for their use from nearby forests, at concession rates.

18. Forest contractors should be made to strip off barks containing tanning materials, before using the wood as fuel or for the manufacture of charcoal, etc. Babul wood, not stripped of its barks should be banned for transport by rail.

19. Forest Department should undertake plantations of Babul trees and Turwad plants in suitable localities and, if possible, plantations of Wattle trees should be undertaken on an experimental basis.

20. Cheap transport facilities by rail, to send tanning materials to tanning centres, should be provided.

21. Research should be undertaken in the qualities of bark and fruits to determine their use. Problems of research on tanning materials should, however, be referred to the Central Research Institute, Government of India.

22. Statistics of the availability of tanning materials in the Province should be maintained by the Statistical Department of the Provincial Government, and should be made accessible to the industry.

23. The question of the shifting of tanneries from Dharavi, should be taken up after thorough investigation by the Government and Municipality of Bombay, about whether these tanneries should be shifted and if so where.

24. Facilities should be provided for imparting technical knowledge regarding modern methods in tanning and finishing by developing the training institutes, as well as by arranging with large mechanised factories in India, to admit and train candidates in machine methods in evolving new designs, and in the methods of utilising waste, such as leather cuttings and fleshings, etc., in the production of by-products such as glue, leather board, etc. Some of these facilities are already available at the Government Harness and Saddlery Factory, Canpore. In the interests of Indian students, it is recommended that this factory should not be closed down, as suggested in the Report of the Panel on Leather and Leather Goods, Government of India, but on the other hand, a Section of Chrome Tanning, and a Mechanised Boot Factory should be added to this establishment to provide for the training of students in these branches as well. (Similar facilities are difficult to obtain for Indian students in Western countries.)

25. Research may be undertaken by the Provincial Government with regard to :—

(1) Improvement in raw materials, their treatment and marketing.

(2) The manufacture of extracts.

(3) The utilization of by-products, such as hide cuttings and fleshings, for the manufacture of glue and gelatine, and leather cuttings and shavings, for the manufacture of leather boards, etc.

(4) Labour efficiency methods.

(5) Statistics of raw materials, tanning materials, production, exports, imports, prices, capital, labour, imports of machinery and chemicals.

The Provincial Government may make arrangements with the Central Government for conducting reasarch in the following :—

(1) New tanning materials as substitutes for existing foreign ones.

(2) New processes of leather manufacture and improvements in the existing ones.

(3) New methods and materials for finishing of leathers.

(4) Fermentation products.

(5) Research in leather machinery.

26. Heavy import duties on industrial leather goods should be levied in the interests of Indian manufacturers propducing these goods. Imports of belting below 4" should be restricted.

27. Shoe making as a cottage industry should be encouraged by introducing improvements in methods of production, and by providing it with cheap and small machinery.

28. At least two mechanized shoe factories, each to produce 800 pairs of shoes per day, should be established at Ahmedabad and Poona.

29. Manufacture of grindery for footwear and other leather goods, should be encouraged by providing the manufacturers with suitable machinery and technical help.

30. Export of finished leather should be restricted, and that of travel and fancy leather goods should be freely permitted to foreign countries.

31. Higher priority should be accorded to raw hides, raw skins, footwear and leather goods for purposes of tranport by rail, and differential treatment between leather goods and footwear should be avoided in movement by rail.

32. Government should help the manufacturers by (i) arranging for import of machinery, (ii) the supply of raw materials and (iii) introducing them to foreign markets through the respective High Commissioners for India.

33. An Advisory committee should be formed representing (i) Leather Goods Manufacturers, (ii) Tanners and (iii) Raw hide exporters, to advise on the export policy to be pursued by Government.

34. The entire working and the difficulties of the Government Tanning Institute and the Leather Working School, Bandra, should be urgently investigated.

PART II.

The Glue and Gelatine Industries.

1. The exports of fleshings, hide cuttings and waste pickers should be stopped, after three months from the time Government adopt the policy of deliberately encouraging the manufacture of glue in the Province.

2. Government should give assurance that the export of bones, will be prohibited, provided sufficient capital is forthcoming, and factories are in a position to absorb all the bones that are being exported.

3. For such manufacturers as may desire to install machinery for dehumidification and air conditioning, import permits may be arranged and also the necessary dollar exchange allowed, if such machinery could be advantageously purchased from U. S. A.

PART III.

The Rubber and Rubber Goods Industries.

The rapid expansion of this infant war-time industry is likely to be retarded, owing to (i) the lack of up-to-date equipment and technical knowledge, (ii) the likely deterioration in standards and specifications, and (iii) the possibility of fierce foreign competition. The natural advantages which the industry now possesses in the nature of raw materials, capital, cheap labour and power, and a large market, cannot, therefore, be exploited unless the Government renders adequate assistance to the industry.

It is therefore recommended that—

1. Government should afford immediate facilities for the import of new machinery and equipment from foreign countries.

2. Government should facilitate import of chemicals and raw materials.

3. Government should establish a Central Laboratory for physical and chemical testing of the products of the small rubber factories, which cannot individually afford to provide a well equipped laboratory.

4. Government should establish a Central Institute of Rubber Technology (i) for conducting research, (ii) for training the necessary personnel, and (iii) for the dissemination of scientific and technical knowledge connected with the industry.

5. Government should also arrange for the establishment of a Rubber Section in a technological institute such as the Victoria Jubilee Technical Institute to train candidates in rubber science and technology.

6. Government should establish a Bureau of Standards to maintain the standard of Indian manufacture at a high level.

7. Government should purchase all the rubber goods required by the Government Departments, from local manufacturers, as far as possible.

8. An Association of Rubber Manufacturers be established to help them generally and particularly, in guiding sales and output with a view to avoid over-production of particular item.

9. Adequate tariff protection be granted to the industry to enable it to stabilise itself in course of time, and,

10. Requirements in capital equipment of the existing manufacturers be given preference over those of fresh entrants into the industry.

With adequate Government help on lines stated above, it can safely be said that the Rubber industry may justly become one of the important industries in the near future.

VI—SUMMARY OF THE MAIN RECOMMENDATIONS OF THE COTTAGE AND SMALL SCALE INDUSTRIES SUB-COMMITTEE.

Textile (Cotton).

1. In order to provide efficient equipment and to organise the weavers, so that their production might be increased, and they are enabled to earn a fair wage and compete with the mills to a reasonable extent, the Sub-Committee recommends that ordinary fly-shuttle type of handlooms may be gradually converted into, or replaced by the automatic take-up type of looms.

2. Wherever power is available, or made available from the Electric Grid System, weavers should be encouraged to install power-looms. The individual power-looms should be expanded by about 50 per cent. and about one-third of the total number of handlooms should be converted into the "automatic" take-up type. The throw-shuttle looms which are only about 15 per cent. of the total should be replaced by fly-shuttle looms.

3. In order to provide suitable yarn to the handloom industry about 15 new spinning mills each having 30,000 spindles should be established and located at the following places :—

Surat, Dhulia and /or Jalgaon, Malegaon, Sholapur, Bagalkot, Gadag or Hubli and Belgaum.

As soon as machinery is available from abroad at least half a dozen mills should be set up in the Districts.

Demobilised soldiers or technical men retiring from the Services should be trained to operate power-looms or automatic take-up looms and produce cloth.

4. In order to overcome the difficulties experienced by the handloom and powerloom industries for want of facilities at the different centres for bleaching and finishing of cloth and yarn, central dye-houses may be started by the District Industrial Association, and either Government owned or subsidised finished plants may be started in such important centres as Sholapur, Malegaon and Bagalkot.

Textile (Woollen).

5. The quality of wool should be improved by starting sheepbreeding farms at different centres where wool is available. Efforts should be made to improve the lot of the existing workers.

6. One of the drawbacks of the woollen industry is that the yarn which is usually spun by women is extremely uneven. Possibilities of installing small domestic spinning plants in some of the centres should be investigated. After plants become available, units may be installed by Co-operative Societies at Gadag, Dharwar and Ahmednagar, etc., Fly-shuttle and automatic take-up looms may be introduced wherever possible to increase production.

The manufacturing of carpets should be revived in the Province as there is a large market for carpets in the U. K., U. S. A. Australia and New Zealand.

Hosiery.

7. When hosiery machines and their accessories are imported or made in India and yarn is made available, several units for the production of hosiery goods should

be started on a cottage scale wherever power is available in towns and villages. Machines for making shoe-laces and file strings should also be operated together with the hosiery machines.

Sericulture.

8. As soon as it is found that the sericulture industry in the Belgaum-Dharwar area is successful, silk farms should be started in the Nasik, Satara and Poona Districts, after carrying out experiments to find out if proper rearing of worms can be done on a large scale in these Districts and a scheme such as the one operating in the Belgaum-Dharwar District should be prepared for the three new Districts.

9. For the utilisation of waste silk, people should be sent to Mysore, in due course for learning how to spin waste silk into yarn.

10. As a subsidiary industry, the preparation of silk guts for surgical purposes should not be overlooked.

Ericulture.

11. Investigations should immediately be carried out to see if the ericulture industry can be developed in Gujarat. Services of an expert should be secured from the Silk Institute at Bhagalpore and small centres started at suitable places in the Ahmedabad District.

Gold and Silver Thread.

12. During the war, soldiers from the allied forces and particularly from the U. S. A. took considerable interest in gold-thread goods. Steps may be taken to create markets in foreign countries for gold-thread goods.

13. A trade school may be run in the Surat City for training hereditary artisans to improve their technique and produce new designs. A research laboratory may also be established in the city so that the quality of "Jari" articles produced may be so improved as to compare with the gold thread of the kind which used to be produced, as for instance, in France a few years ago.

14. Efforts should be made to manufacture crucibles of the standard of the imported ones for melting metals required for "Jari" industry. The melting and annealing furnaces may be modernised and the winding and flattening machines improved.

15. As there is a scope for further development of the industry on a cottage or small-scale, by 33 per cent., more electric power may be provided and raw materials such as silk, art silk, cotton yarn, chemicals, etc., made freely available.

16. As about 20 to 30 tons of copper wire are required per month in Surat, a plant for metal melting and wire drawing may be put up there by a manufacturers' Co-operative Industrial Organisation.

Fibre.

17. The cultivators should be taught the advantage of growing Sann Hemp as a fibre crop instead of only a crop for green manuring, and an attempt should be made to increase the production by about 25 per cent. during the next 5 years or so.

18. A scheme for cultivation of Ambadi fibre on a large scale and the production of Ambadi Fibre from it on a cottage basis, and for installing a mill similar to a jute mill for producing hessian, etc., should, after a detailed investigation be prepared. Its result should be watched and further development planned accordingly.

¶ 19. Plantations of a few thousand acres with Aloe fibre should be encouraged for producing fibres not only for the cottage workers on an organised basis but also to feed a small rope factory which should be started as an experimental measure. Wherever possible the fibre workers should be organised and raspadaors installed at the centres where also fibre is growing so that full use is made of the fibre grown. A comprehensive survey should be made.

¶ 20. A central institute of development and research may be installed on the pattern of the Dehra Dun Forest Research Institute where all problems relating to the cultivation, processing and improvement of different fibres can be dealt with.

Coir

21. In order to develop the coir industry both on a cottage scale as well as on a small-scale or a large scale factory basis about half a dozen demonstration parties should be started immediately. Coir fibre should be produced in the first instance on a cottage scale and then converted into coir products by the small factories. This will enable the coir resources of the Province to be utilised as much as possible.

22. Factories may also be established in some of the coastal villages in the North Kanara, Ratnagiri, Kolaba and Thana Districts to manufacture such articles as yarn, ropes, matting, fancy fibres mats, etc.,

Paper.

23. Although hand-made paper made from waste paper, etc., cannot be produced economically so as to compete with machine-made paper, special types of paper like currency paper, document paper, drawing paper, blotting paper, filter paper and high grade writing paper can be produced on a cottage scale. An attempt should be made to train the hereditary workers in Ahmedabad, Erandol and Junnar. The Process should be semi-mechanised.

Wherever practicable calendering machines should be installed at the "Karkhanas" where paper can be glazed. Government may encourage the Kagdis by purchasing the paper made by them.

Tanning and Leather working.

24. Greater attention should be paid to tanning of skins and producing leather such as glazed-kid, etc.; and leather articles such as hand-bags, purses, etc. and industrial leather articles such as belting, pickers, etc. Steps should be taken to develop the tanning industry in the different centres of the Province on modern lines.

Glue.

25. Glue is a by-product of hides and skins. Fleshings and hide-cuttings are not utilised as the village tanners do not have the knowledge of how to prepare glue from them. The Sub-Committee, therefore, recommends that efforts should be made to train tanners to manufacture glue during the dry months of the year. Co-operative Societies of tanners should be induced to take up the manufacture of glue.

Mechanical and Metal.

26. Small workshops costing about Rs. 15,000 to Rs. 20,000 should be established at the headquarters of such Talukas as have been selected by Government for extensive development in the post-war years. In addition to this, workshops should be installed in the selected talukas of the following Districts which are comparatively undeveloped.—

Khandesh,
Kaira,
Broach, and
Panch-Mahals.

Such workshops may be started immediately, as an experimental measure, at the following places :—

Baramati, Poona District.
Karad, Satara District.
Bijapur, Bijapur District.
Belgaum, Belgaum District.
Sholapur, Sholapur District.
Hubli, Dharwar District.

Carpentry, Wood-working etc.

27. Small workshops costing about Rs. 10,000 each should be established at the headquarters of such Talukas as have been selected by Government for extensive development in the post-war years. In addition to this, workshops should be installed also in the selected Talukas of the following Districts which are comparatively undeveloped :—

Khandesh.
Kaira.
Broach, and
Panch-Mahals.

Such workshops should be started immediately, as an experimental measure, at the following places :—

Karad, Satara District.
Khed, Ratnagiri District.
Roha, Kolaba District.
Bagalkot, Bijapur District.

28. Timber and Wood-working industry is very important and small-scale industries should be established, particularly in the forest areas so that the best use can be made of the forest wealth of the Province. It is recommended that Government may provide the co-operative societies with timber at concession rates.

Bamboo and Cane Work.

29. There is a scope for the development of the industry in the manufacture of utility articles on a cottage scale from bamboo and cane all over the Province although artisans employed in the manufacture belong to a very poor class and are mostly illiterate. With proper training and organisation and the assistance of demonstration parties, co-operative societies should be established wherever possible so that artisans can purchase their raw materials cheaply and dispose of their articles at a fair price. Although the equipment required by the cane and bamboo workers is simple, attempts should be made to introduce machines in order to obtain larger production.

Lac.

30. Lac-cultivation and utilization is in a very elementary stage at present in the Province. The main lac producing Districts are the Panch Mahals, Surat, Khandesh, Dharwar and Bijapur. Though certain areas are unsuited for the cultivation of lac, efforts should be made to introduce this important industry successfully in the Province.

31. As there is a fairly large collection of lac in the area around Godhra a few small-scale factories can be put up for the production of shellac and button-lac. The Forest Department should engage experts, if necessary, after consulting the Indian Lac Research Institute, to make surveys and to train people in this Province in the industry.

Glass Bangle.

32. Although glass bangle workers assisted by the Department of Industries are successfully conducting their business at certain places, there is a scope for extending the glass bangle industry in some of the Talukas of the following Districts :—

Bijapur, Belgaum, Ahmednagar and Nasik.

Pottery, Bricks, Tiles, etc.

33. Potters should be organised to form co-operative societies wherever possible. Small industrial units should be established at Derol in the Panch Mahals District, near Khanapur in the Belgaum District, Honavar in the North Kanara District and near Jalgaon in the Ratnagiri District. More demonstration parties should be located in some central places where training could be given to "kumbhars" coming from neighbouring localities. A central factory on a small scale should be established for providing prepared raw materials, glazefrit, plaster moulds, etc., at one suitable centre. Potters should be taught to make glazed-ware to a larger extent and also crockery-ware for which there will be demand in the towns in the near future.

Bee-keeping.

34. On the lines of the development of the bee-keeping industry on a cottage basis in the North Kanara District, efforts should be made to develop this industry in the Districts of Ratnagiri and Kolaba. In each of these Districts

about 3,000 colonies should be introduced in the next 5 years. The colonies in the Kanara District can now be appreciably increased. Similarly this industry may also be introduced in the District of Nasik and further developed in the Satara District.

Fruit Preservation.

35. As an experimental measure, Government demonstration centres should be started in the Surat, Ratnagiri and Ahmednagar Districts for producing mango pulp and citrus fruit juice. Students should be admitted for training in the preparation of jams, jellies, chutnies, pickles, etc., at the centres.

Gur.

36. The Sub-Committee recommends that for the purpose of increasing the production of gur in the different parts of the Province, the cultivation of sugar cane may be encouraged, in addition to food-grain crops, even in non-irrigated areas, by establishing co-operative societies and installing pumping stations along the river banks and for supplying water from wells.

37. As certain type of sugar-cane cannot be crushed efficiently in hand operated mills it is suggested that efficient power-driven mills should be installed for crushing sugar-cane.

38. Arrangements should be made for neutralization and clarification of juice by means of Fullers earth, etc., and evaporating pans of improved design should be introduced to prevent juice being caramalised.

Vegetable Oils.

39. In the next five or ten years, the existing inefficient country "ghanies" should be replaced by improved type "ghanies" designed by the Department of Industries. The telies in villages having population of 1,000 and over should be induced to use improved type "ghanies".

40. The Sub-Committee suggests that parity between the price of mill and "ghani" oils for edible purposes should be maintained by Government for assisting the cottage industry. The "teli" should be encouraged to produce "Til" and "Kardi" oils rather than ground-nut oil.

41. As cocoanut oil is used for edible purposes in parts of the Konkan, the area under cocoanut plantation should be increased in order to encourage cocoanut oil supply.

42. The policy of Government may be to encourage installation of expellers more in the District towns than in the cities. More tank wagons may be put in service to transport oil to the cities either for manufacturing different products, from it or for export.

Essential Oils.

43. The Sub-Committee recommends that in order to improve the quality and yield of Roshia grass oil, Cinnamon leaf and bark oil and other essential oils, simple steam distillation apparatus may be introduced on a larger scale and the crude oil collected from the cottage workers sent to a central distillation plant for further treatment, purification, etc.

44. It is also suggested that in addition to improving the methods of distillation and treatment, cultivation of the plants in suitable areas may be undertaken on a larger scale.

Art-crafts.

45. At present 10 scholarships of Rs. 30 per month, tenable for two years, are given to hereditary workers engaged in different art-crafts for obtaining training in recognised schools within or outside the Province. As the number of applications received for scholarships is large, a larger number of scholarships may be allotted to different subjects.

Miscellaneous.

46. The Sub-Committee recommends that efforts should be made to develop some of the following cottage and small scale industries on a co-operative basis so that a larger number of people will be employed and the quality of the product will be improved :—

Confectionery and Biscuits,

Bidi-making,

Snuff,

Akik stones,

Agarbatti,

Rice pounding and husking,

Kumkum, etc.

Cottage and Small Scale Industries in Bombay City and the Suburbs.

48. The Sub-Committee recommends that efforts should be made to develop some of the cottage and small-scale industries existing in the city and its suburbs as suggested in the Report.

Mechanical and Electrical Power.

49. The Sub-Committee suggests that in order to increase production of the individual worker, to do away with drudgery and to enable the peasant to have leisure and comfort, fullest use must be made of mechanical and electrical power wherever it is available, without displacing human labour. Simple appliances operated by means of mechanical or electrical power should be introduced and adequate training should be given to artisans to work such equipment.

50. Where electric power is not available, oil engines may be installed to drive machinery.

51. It is understood that several thousand Horse Power in some of the cotton ginning and pressing factories in the Province remains idle for the greater part of the year. A detailed investigation should be carried out to see how this surplus power can also be utilised for industrial purposes other than cotton ginning and pressing.

52. The Sub-Committee recommends that electrification of the Province should be carried out as expeditiously as possible and facilities should be provided for the artisans to go in for machinery.

Co-Operative Societies.

53. The Sub-Committee recommends that Co-operative Societies of workers in the different cottage and small-scale industries may be established at the suitable centres particularly those where the artisans have been trained by Demonstration Parties.

Organisation.

54. The Sub-Committee is of opinion that control of industries should be in the hands of Government and cottage industries should be organised jointly by the Co-operative and Industries Department.

55. A Provincial Industrial Federation as per one of the Post-War Schemes of the Government of Bombay should now be set up to co-ordinate the activities of the District Industrial Associations.

56. The Sub-Committee recommends that District Industrial Associations may now be established in each of the Districts where there are no Associations. For the time being the District Industrial Associations will cater to the needs of all the cottage industries in the Districts.

57. The Sub-Committee recommends that special institutions may be established in each of the three Divisions of the Province to train demonstrators in various lines such as weaving, dyeing, tanning, leather working, metal working, carpentry, cane and bamboo, fibre and pottery.

58. The District organisations of the Department of Industries should be such that a fairly accurate survey of cottage industries can be made every five years.

59. In order that the products mostly meant for rural areas may be marketed with advantage, the functions of the Rural Co-operatives, i.e., multi-purpose societies or Agricultural Credit Societies should be enlarged so that marketing of cottage industries products can be done through them. The Customer Agency Scheme which has been successful in the Nasik District should be given a trial in the other Districts as well.

60. The Co-operative structure as visualised in the Report may not cover all the industries and the individuals employed therein. Some organisations will, therefore, have to be set up for helping such industries and individuals.

61. Co-ordination of the work of Co-operative and other organisations working in the same field will be necessary and for that purpose it would be desirable to set up committees as may be necessary for the Districts and for the Province.

Finance.

62. The Sub-Committee recommends that the most suitable agency for giving financial assistance to persons engaged in subsidiary occupations will be the village co-operative societies either credit or multi-purpose. Separate societies for such

workers may not ordinarily be encouraged but should be allowed to be formed where there are homogenous groups of persons who are not members of other co-operative societies.

63. The funds which will be needed for the purpose can be obtained by the societies from the Co-operative Central Banks. For persons who reside at places where there are no village co-operative societies, finance may be provided by Government under the Agriculturists Loans Act or the State Aid to Industries Rules which may have to be amended to enable such finance being undertaken.

64. Finance for workers in cottage industries should be provided either by co-operative organisations or by Government.

65. A scheme such as that adopted by the Government in 1935 for the encouragement of Co-operative District Industrial Associations may be continued.

66. For a large scale programme of development, the most suitable agency would be an Industrial Co-operative Bank to be registered under the Bombay Co-operative Societies Act on the lines recommended by the Bombay Economic and Industrial Survey Committee. A similar arrangement will have to be made in the case of industries and individuals not covered by co-operative organisations.

67. The Sub-Committee favours the establishment of an Industrial Bank for small-scale industries. Pending the formation of an Industrial Bank, the Government of Bombay may continue to extend assistance to small scale industries after revising suitably the rules framed by them for the grant of financial assistance.

Plan of Development.

Experts should work out details particularly for new industries and prepare schemes for an extensive industrial development in rural areas on the basis of a five-year plan.

APPENDIX C—*contd.*

VII—SUMMARY OF THE MAIN RECOMMENDATIONS OF THE SPECIAL SUB-COMMITTEE.

Metals and Engineering Industries Sub-Committee.	Location.	Special Sub-Committee.
Iron and Steel Basis	... .. Kalyan Junction of two Railway lines, close to Bombay Harbour through which coke could be obtained. Kalyan is also near iron ore deposits in South Ratnagiri District, and in Savantwadi State.	Kalyan-Ambernath area; suitable location for factories producing special steels also, as determining locational factor is availability of cheap electric power. Chiplun, after the completion of the Koyna Hydro-electric works; disadvantages are lack of harbour facilities and all-weather roads.
Steel Re-Rolling	... ..	Kalyan-Ambernath area as billets could be easily obtained from the iron and steel-plant, if established. Nadiad, Bhusaval, Hubli.
Associated Industries	... ..	At sites recommended for re-rolling mills since they would depend for raw materials on the latter.
Non-Ferrous Metals.—		
(a) Copper	... .. Ores will have to be imported; hence location near a port.	Equally important are availability of water and electric power. Kalyan-Ambernath area and Chiplun; transport of ore to the latter place might not be easy due to the absence of all-weather road.
(b) Copper-Somies	... ..	Ahmedabad, Nasik, Nadiad or Poona. Requirements of the Southern Division could be more easily met from the last mentioned place. Investigation of the following areas near Poona for the location of such of the metals and engineering industries as have been recommended by the Sub-Committee for establishment at Poona— (i) The area lying to the south of Hadapsar along Sasvad Road. (ii) The Vadgaon-Chinchwad-Kirkee area lying between the Bombay-Poona Road and the Poona-Nasik Road. (iii) The Pimpri-Vaghera Area.

(c) Manganese	..	.	..	..	Could be located in Panch-Mahals, Kanara and Belgaum Districts, if electric power were made available. Alternative locations—Kalyan-Ambernath area and Chiplun.
(d) Non-Ferrous Scrap	...	.	..	..	At places where scrap is either available or to which it can be easily transported. Hence Kalyan-Ambernath area, Ahmedabad, Nadiad, Hubli, Nasik, or Poona.
Aluminium	...	...	...	... Location near the Koyna Hydro-Electric Project.	Bauxite found in Thana, Kaira and Belgaum Districts; composite refining and reduction plant not possible due to insufficiency of electric energy in the above Districts. Refineries at Bassein and near Belgaum. Reduction plant close to the Koyna power station; possibility of locating another unit near the Kalinadi Hydro-electric power station may be investigated. Semies could be produced in factories manufacturing non-ferrous semies.
Prime Movers	...	...	...	...	Poona, Nadiad and Hubli, considering that manufacture requires skilled labour. Kalyan area, for factories turning out large machines.
Machine Tools	...	...	...	...	At places where good casting facilities and skilled workers are present. Poona and Hubli.
Electrical Machinery and Accessories—					
(a) Transformers and Motors	...	...	...	... Skilled and semi-skilled labour is the determining factor.	In view, further, of the fact that most raw materials and components will have to be imported, Kalyan area and Greater Bombay would be suitable; Poona is another good site.
(b) Dry Batteries and Cells	...	...	...	...	In different parts of the province to meet local demand. Surat and Nadiad in the Northern Division, Poona and Dhulia, in the Central Division, Dharwar, Bigaum or Hubli in the Southern Division.
(c) Incandescent Lamps	...	...	...	...	Surat and Nadiad, Poona, Hubli and Belgaum as a means of reducing transport costs.
(d) Table Fans	...	...	...	...	Greater Bombay, Kalyan, Ambernath and Surat, if it is not found possible to manufacture them in factories turning out motors and transformers.

APPENDIX C—contd.

Metals and Engineering Industries Sub-Committee.	Location.	Special Sub-Committee.
Cotton Textile Machinery	Two plants, one each at Bombay and Ahmed- dabad.	Should not be located within the cities as they have already reached saturation point but in Greater Bombay or Kalyan and in the Suburbs of Ahmedabad. Sholapur and Hubli may also be found suitable.
Steel Safes, Cabinets, etc.		Chief locational factors are proximity to market and availability of labour. Hence Ahmedabad or Nadiad and Hubli.
Bicycle		Near large towns like Ahmedabad and Poona.
Radio		As the industry requires technicians, it might be located in the Greater Bombay Area.
Refrigeration Equipment	In large consuming centres	Necessary to develop the industry in an area well served by electricity. Bombay suburbs and Kalyan would be ideal spots.
Scientific and Surgical Instruments	As the Industry's market will extend to Sind, the C. P., Madras and even to foreign countries, it ought to be located in the Bombay City.	Greater Bombay or Kalyan, Poona and Surat (where there are skilled workers).
Agricultural Implements		Anand in the Northern Division, Poona in the Central Division and Hubli in the Southern. Possibility of locating a factory at Bijapur may be examined as it would provide some employ- ment to people in this famine area.
Wagon Building	Assembling Unit at Manmad Junction of both broad and metre gauge systems.	Manmad Junction or Dohad on the R. B. & C. I.

Structural Engineer	...	...	Kalyan-Ambernath area is suitable, from the point of view of nearness to raw materials and availability of trained labour.
General Engineering—			
(i) Iron castings	...	...	New factories should be located as near the market as possible so the Greater Bombay and Kalyan-Ambernath areas, Ahmedabad, Surat, Poona, Sholapur, Jalgaon, Dhulia and Hubli would be proper locations.
(ii) Steel casting	...	...	Kalyan-Ambernath area and Chiplun where the location of the steel industry has been recommended.
(iii) Forging and Drop stamping	...	...	Close to general engineering works and shipyards, by which they are primarily used.
(iv) Welding	...	...	Near large engineering works and shipyards.
Miscellaneous			
(a) Metal cans and Drums	...	...	As larger part of the total demand comes from Bombay, the industry can best be located in the Greater Bombay and Kalyan Ambernath areas. Cans for food stuffs can be conveniently manufactured near places where the canning of foodstuffs is carried on.
(b) Metal cutting Tools	...	...	Will have to draw its materials from the electric steel factory. Location of the plant at Kalyan or Chiplun.
(c) Clocks	...	...	Poona, Surat and Ahmedabad would be suitable sites.

Textile Industries Sub-Committee.	Location.	Special Sub-Committee.	
Cotton Textiles	No new mills to be permitted in Bombay City or Ahmedabad in view of the prevailing congestion. However, Greater Bombay area suitable for cotton textile mills (fine counts) and sewing thread industry. Vicinity of Ahmedabad also suitable for sewing thread industry. Spinning mills could be located in important centres of the handloom industry.

APPENDIX C—*contd.*

Textile Industries Sub-Committee.	Location.	Special Sub-Committee.
		<p><i>East Khandesh District.</i>— Jamner and Erandol (spinning or composite mills).</p>
		<p><i>West Khandesh District.</i>— Nandurbar and Dondaicha.</p>
		<p><i>Nasik District.</i>— Malegaon (spinning mill only).</p>
		<p><i>Satara District.</i>— Karad.</p>
		<p><i>Ahmednagar District.</i>— Rahuri (spinning mill only).</p>
		<p><i>Belgaum District.</i>— Belgaum, Kudachi and Athni (spinning mills only).</p>
		<p><i>Dharwar District.</i>— Ranebennur.</p>
		<p><i>Bijapur District.</i>— Bagalkot (spinning mill only).</p>
		<p><i>Broach District.</i>— Ankleshwar. Electric power could be supplied to some of these places from the Grid. Establishment of the mills in the above places will depend on the availability of water.</p>

Finishing, Dyeing, and Printing Special sites should be reserved in places where water is obtainable, such sites should have adequate road and rail facilities. They should not be far from sources of supplies of grey cloth, heavy chemicals and dyes and should be so situated that the distribution of the finished cloth can be achieved as economically as possible.

Greater Bombay or Kalyan areas. Barejadi or some other place away from the town as may be recommended by the Ahmedabad Municipality. In view of the number of weaving factories Surat would be a good location but chemicals will have to rail all the way from Bombay.

Rayon **Surat, Kalyan, Patalganga River Area, Kundalila River Area, Near the Kalinadi Hydro-Electric Project**

The industry requires:—pulp of a high quality and chemicals, fresh and abundant supply of soft water, cheap power; facilities to dispose of effluents. Kalyan and Patalganga river areas would be suitable. The Sub-Committee however understands that it is cheaper to carry water from the river Patalganga to Panvel where power is available than to carry power to the river side. Kharpada might be suitable if it is thought desirable to locate the rayon mills as near the river as possible. Chiplun and Kalinadi area might be examined for the purpose of locating the industry.

Woolleh **As finer varieties of wool will have to be imported the industry should be located near Bombay City.**

Kalyan-Ambarnath Area.

Food and Forest Industries Sub-Committee.	Location.	Special Sub-Committee.
Canned Foodstuff ..	.. The distance separating a factory from growing areas will depend on the degree of perishability of the fruits and vegetable to be canned. An abundant supply of pure water is essential.	Canning of vegetables at Nasik, and Poona. Canning of mangoes at Ratnagiri and Bulsar. Places in the vicinity of Jalgaon - Rahuri and Poona will be suitable for factories bottling fruit juices; Kumta or Ankola in Kanara District would be good locations for mango and pine-apple canneries.
Biscuits ..	.. .. .	Ought to be located near Cities with large populations. Greater Bombay, Ahmedabad, and Poona.

APPENDIX C—*contd.*

Food and Forest Industries Sub-Committee.	Location.	Special Sub-Committee.
<i>Cereal Food—</i>		
(a) Rice Flake and Puffed rice ..	.. Ahmedabad, Jalgaon, considering availability of raw material and market for the products.	In rice cultivating tracts i.e., in Nadiad, Bulsar, Bhivandi, Panvel, Chiplun, Dharwar, Belgaum, Haliyal.
(b) Wheat and corn Flakes ..	.. Jalgaon and Bhusaval in East Khandesh where wheat is grown and board factories are close by. The latter is an important railway junction.	Dondaicha in West Khandesh, as it is a railway station on the Tapti Valley system and is a principal wheat market Niphad in Nasik District and Greater Bombay area.
(c) Macaroni and Vermicelli ..	.. Bombay, in view of the fact that the milling industry, which supplies the chief raw material, is in Bombay. Other places would be Surat or Ahmedabad and Poona can be a by-line of the wheat flakes industry.	
(d) Sugar confectionery ..		Near Sugar factories, as syrup will be obtainable at a cheaper rate than sugar.
Vegetable (Edible) oils ..	.. Expellers in small towns near railway stations or trunk roads. Location will require detailed investigation. Crushing capacity in Bombay should be increased to the extent of meeting the requirements of the capital for oil and for vegetable product.	Having regard to current production of oilseeds and number of expellers in existence, the following places are recommended as suitable sites:— Satara—Karad area; Bijapur and Bagalkot; Belgaum and Hubli.
Vegetable Ghee ..		Near oil extracting centres in East Khandesh, Satara, Dharwar and Belgaum Districts.
Sugar ..	.. New factories could be established after the construction of the Vir, Gangapur and Khadakwasla Dams. Public Works Department should indicate possible sites.	
Power Alcohol ..	.. At a local point like Poona, from which sugar factories are not more than 150 miles distant.	Belapur Road as only short haulage is involved. Not so with Poona.

Pulp and Paper .. ..	.. ..	.. Kanara Forest where plentiful quantities of bamboo are available; further, power can be transmitted from the Jog Falls power station and water obtained from the Kalinadi and Gangavali rivers.	Kanara Forest, at Dandeli or Bomanalli. The former is a rail head and power could be obtained from the Kalinadi power works. In the case of Bomanalli (11 miles away from Dandeli), power could be generated at the nearby Vincholi rapids if it is not possible to supply it with the same from the Kalinadi Hydro-electric works. The following other sites might be investigated:—Supa, Sidalgaundi, Sunksal, Kadra, Gundbala in North Kanara and Khanapur in Belgaum. If adequate supplies of bamboos could be procured from the Dang forests, (which are in Indian state territory), a factory in British India as near the forests as possible, may be established.
Straw Boards, etc .. ..	.. ..	.. The main factors to be taken into consideration are:— (i) availability of the raw material viz., grass (ii) abundant supply of water (iii) cheap Hydro-electric power; West Khandesh.	Nardhana in West Khandesh possesses excellent road and rail connections. Electric power would be available from the Grid when the Bhandardara scheme is completed. Other suitable sites would be:— (1) the catchment area of the Tansa lake where grass grows in plenty. A site near Atgaon Station may be chosen. (2) A place in Ahmednagar District; the factory could manufacture wrapping papers and board from bagasse obtainable from the sugar mills.
Saw mills .. ..	.. ..	.. Forest Department should conduct a survey to mark out suitable sites. Good quality timber is available in the Kanara forests; a serious drawback is that proper transport facilities are wanting.	Near Kanara and Thana forests, Alnawar, Kirwatti, Kumta and Karwar-Kanara District; Kalyan, Sanjan, Manor and Savta Bunder—Thana District.
Bobbins and shuttles .. ..	.. ..	.. <i>Bobbins</i> .—According to the Forest Department Belgaum, Dharwar, Kanara Districts would provide good sites. <i>Shuttles</i> .—Bombay, Ahmedabad, Billimora; certain other places in the southern part of the Province might be found suitable, when power from the Grid is made available.	Belgaum and Khanapur—Belgaum District; Dandeli, Ankola, and Yellapur—Kanara District; sufficient water and labour are available in the first two places. There is no electric power at Khanapur. Yellapur is 46 miles from Hubli Station and 45 miles from Ankola port. There is neither a labour force nor electric power in Dandeli and Yellapur; the former is a rail head. Navapur in West Khandesh has transport facilities and is near forest area. Water available but no electricity at present.
Wood Distillation .. ..	.. ..	.. Surat, Thana and Panch Mahals and Kanara Districts.	Refer page 95.

APPENDIX C—contd.

Food and Forest Industries Sub-Committee.	Location.	Special Sub-Committee.
<i>Plywood</i>	A place on the Kanara coast since sufficient timber can be secured from the surrounding forests for the next twenty years.	Madangeri (near Tadari Port) in Kanara to which timber from several valleys could be conveyed.
<i>Shipbuilding</i>		Until the question of development of Bhatkal is settled one way or the other, small country craft could be built at Karwar or Bulsar (in Surat District).

Chemical Industries Sub-Committee.	Location.	Special Sub-Committee.
I. Heavy Chemicals		
(a) Sulphuric Acid.	There is likely to be a heavy concentration of Industries using this acid, at Ahmedabad and Kalyan. Moreover the two areas have adequate water and power supplies. The fact that sulphur will have to be imported is an additional factor.	Kalyan-Ambernath area and Barejadi or some other place near Ahmedabad as may be recommended by the Ahmedabad Municipality. Location away from inhabited area owing to the dangerous character of the effluent and fumes.
(b) Allied Products		Near sites of sulphuric acid plants.
(c) Superphosphates		Determining factors, availability of coals and sulphuric acid. Anand or Godhra. If at Anand, at least 3 to 4 miles away from the dairies. Alternative sites: (a) Pimpri near Chinchwad, about 3 miles away from the military dairy. (b) Hadapsar. (c) Belgaum.
(d) Caustic Soda.	Bombay and Ahmedabad	Near Bombay and near Ahmedabad, as they are large consuming centres. Kalyan-Ambernath and Barejadi or some other place supplied with enough water, recommended by the Ahmedabad Municipality. Electrolytic caustic soda factories might be located in Chiplun or Dandeli (near the Kalinadi Hydro-Electric works).
Chlorinated products	Near factories producing caustic soda by the electrolytic process.	Same recommendation.
Others	Bombay and its Suburbs. Potassium chloride at Kharagoda and Mithapur.	Near plants manufacturing acids i.e., in the Kalyan-Ambernath area or Greater Bombay.

II. Fine Chemicals—

- (a) Inorganic Fine Chemicals ... Manufacture ought to be carried on along with heavy chemicals.
- (b) Organic Fine Chemicals ... Will be governed by availability of raw materials research and technical help and nearness to market. Hence Bombay and Ahmedabad and Baroda. Alcohol manufacture near centres—like Rawalgaon—of molasses production. Manufacture can be advantageously carried on in association with that of dyestuffs. Location of the latter industry in the Kalyan—Ambernath area has been recommended.
- (c) Drugs and Pharmaceuticals ... Bombay; has all facilities required for large scale manufacture are present. Greater Bombay and Kalyan-Ambernath.
- (d) Textile Chemicals ... Chemicals needed by the Textile Industry will be produced by the Heavy and fine chemicals Industries; starch factory may be established at Godhra or any other suitable place where there is an adequate supply of water when total production of maize is in excess of food requirements. If maize could be imported a factory might be set up in Kalyan.

III. Wood Distillation, Coal Carbonisation and Petroleum Refining.

- (i) Destructive Distillation of Wood ... Forests of North Kanara and the Dang Forest in Gujarat. The following sites, in the vicinity of the Forests of North Kanara, West Khandesh, Thana, Panch-Mahals, Kolaba and Belgaum Districts would be suitable. Bomanalli, Yellapur, Sirsi, Kadra and Sirgunji—Kanara District. Navapur—W. Khandesh District. Kalyan, Vasind, Dahanu Road—Thana District. Khadia, Chabanpur and Chanchlav—Panch Mahals District. Khopoli, Nagothana and Roha—Kolaba District. Londa—Belgaum District. Before locating a plant in the Dang Forests (which are in states territory), it will be necessary to make sure that a continuous supply of wood will be available. The Food and Forest Industries Sub-Committee have suggested Panch-Mahals and Thana Districts as possible location.

APPENDIX C—*contd.*

Chemical Industries Sub-Committee.	Location.	Special Sub-Committee.
(ii) Coal Gas and Coal Tar Products ...	Coal Carbonisation plants at Bombay, Ahmedabad, Surat, Sholapur and Poona.	Plants could be installed if the coal situation eases. Priority to Ahmedabad and Poona, since there would be a ready market for coke.
(iii) Dye-stuffs ...	Factors in favour of Bombay— (i) Transport economics in respect of the finished products and of raw materials. (ii) Technicians can be secured.	Kalyan—Ambernath area in the vicinity of Heavy Chemical Industries.
(iv) Petroleum Refining ...	Close to a deep water jetty i.e., near Bombay Harbour.	Trombay, at some distance from Pir Pau. Ought to be away from inhabited places and industries.
IV. Glass, Pottery, Ceramics etc.		
(i) Glass Industry ...	A place near Bombay, having easy access to the sea, as good quality sand from North Kanara and Soda Ash from Mithapur can most economically be transported by coastal vessels.	Desirable to locate the industry as near the market as possible owing to difficulties involved in transport of glass. Greater Bombay and Kalyan—Ambernath area.
(ii) Pottery, Ceramics and Refractories ...	A large-size unit (capital—Rs. 25 lacs) for each of the bigger cities; a small size unit in each of the smaller towns where raw materials and power are obtainable.	A factory in the Kalyan—Amernath area to manufacture white wares of high quality from imported clay. Khanapur to use locally available clay. Geological survey necessary to determine sites. Brick manufacturing plants at Bassein and Kalyan in Thana District. Derol in Panch-Mahals and Khanapur in Belgaum. Good quality clay is available in all these places.
V. Cement and Cement Products ...	Porbunder, Port Veraval, Jamnagar and Sevalia from the point of view of raw materials, power and transport facilities.	Sevalia in Kaira District. Bagalkot in Bijapur District if good lime-stone deposits are found. It is first necessary to carry out a detailed geological survey of other areas in regard to the availability of lime-stone and clay in adequate quantities.
VI. Inedible Oils, soaps, paints and varnishes.		
(i) Inedible Oils ...	Near markets for the oils ...	Linseed is grown in West Khandesh, Bijapur, Nasik, Ahmednagar, Sholapur, Belgaum, Dharwar and Satara Districts (Karad in Satara). Caster oil seeds are grown in Ahmedabad, Surat, Panch-Mahals, Kaira (Nadiad), Broach, West Khandesh and Dharwar Districts; sites in these areas may therefore be selected.

(ii) Soaps ... Near Vanaspathi and Caustic Soda factories to be established in Bombay, Ahmedabad and places in Kathiawar as chief raw materials are vegetable oils and caustic soda. Specifically the locations suggested are Bombay, Panchora, Baroda, Jamnagar and Porbunder. Like recommendation.

(iii) Paints and Varnishes ... Bombay possesses an advantage in that technicians and a skilled labour force are present. As it is proposed to locate the bichromates industry, which will supply chrome pigments, in the Kalyan area, factories for the manufacture of pigments and paints may be situated in that same area or in Greater Bombay. Alternative locations would be near inedible oil mills natural pigment deposits in Ratnagiri and Kanara Districts or near the market. Varnish factories may be located near inedible oil-mills.

VII. Electro Chemicals—

(i) Aluminium ... Location must be settled after due consideration of the following—
(a) Supply of water.
(b) Transport facilities.
(c) Cheap Labour
(d) Availability of electric energy.
Recommended site near Kalyan on the river Ulhas. The site has the following advantages—
(i) Large quantities of bauxite.
(ii) Fresh water supplies from the river.
(iii) Road, rail and water, transport facilities.
(iv) Chemicals will be easily available.
Refining and reducing plants may be installed in a composite unit. (Compare recommendation of special Sub-Committee on page 87).

(ii) Hydrogen Peroxide ... Main requirement is electric power. Manufacture may be carried on in conjunction with concerns already producing electro chemicals. Near sulphuric acid and electrolytic caustic soda plants.

VIII. Plastics ... Bombay City or Suburbs seeing that the industry mainly requires organic chemicals (which are manufactured in Bombay) other advantages, (i) general commercial facilities and (ii) presence of trained labour. Ought to be located near the market; places near Bombay, Panvel, Nadiad, Surat, Poona would be good location. Plastics powder industry may be situated near the dyestuffs industry.

APPENDIX C—concl'd.

Miscellaneous Industries Sub-Committee.	Location.	Special Sub-Committee.
Pit Tanning	<p><i>Northern Division—</i> (1) Ahmedabad. (2) Godhra.</p> <p><i>Central Division—</i> (3) Nandurbar. (4) Ahmednagar or Nasik. (5) Sholapur and (6) Satara.</p> <p><i>Southern Division—</i> (7) Belgaum or Hubli.</p>	<p><i>Northern Division—</i> Ahmedabad and Godhra.</p> <p><i>Central Division—</i> Poona, Satara, Sholapur, Malegaon and Nandurbar.</p> <p><i>Southern Division—</i> Belgaum.</p>
Chrome Tanning		<p>The existing tanneries at Ahmednagar procure hides and skins from outside the district; moreover, water supply is deficient. Location must be away from residential areas.</p> <p>The above places, particularly Ahmedabad, Sholapur, Belgaum and Greater Bombay might be chosen.</p>
<i>Miscellaneous Tanning—</i>		
(i) Oil tanning, Glace kid, etc. ...		In the vicinity of chrome tanneries.
(ii) Specially dressed leathers ...	One in Bombay City and one in each of the three Divisions.	Greater Bombay, Ahmedabad (Northern Division) Nasik (Central Division) Belgaum (Southern Division).
Industrial Leather goods		<p>At places where tanneries are situated. The following are the best sites, considering availability of raw materials, labour, transport facilities, etc.—</p> <p><i>Northern Division—</i> Ahmedabad, Nadiad, Godhra and Broach.</p> <p><i>Central Division—</i> Poona, Karad, Sholapur, Malegaon, Nandurbar.</p> <p><i>Southern Division—</i> Hubli and Belgaum.</p>

Footwear	...	...	Ahmedabad and Poona as they do not have a humid atmosphere. Requirements of leather can be obtained from nearby tanneries.	Like recommendation. Nasik and Belgaum, for additional factories. Greater Bombay, if a dehumidifying plant were installed.
Travellers Requisites	...	...		If the goods were produced on a large scale, the following sites would be suitable. <i>Northern Division—</i> Ahmedabad and Surat. <i>Central Division—</i> Poona, Nasik, Sholapur, Ahmednagar, Satara or Karad and Dhulia. <i>Southern Division—</i> Hubli and Belgaum.
Guts	...	...	No expansion	Near slaughter houses in Ahmedabad, Poona, Ahmednagar, Sholapur, Bijapur and Belgaum, Greater Bombay.
Oil and Leather Cloth	...	...	Do.	Kalyan—Ambernath.
Glue and Gelatine	...	...	Poona and Deolali, in view of dry climate. Bombay has the following point in its favour, viz., proximity to tanneries and to market. A dehumidifying plant will have to be installed.	Ahmedabad, Poona, Malegaon, Ahmednagar and Satara, or Karad and Bombay.
Rubber Goods	...	...	No new factories	Continual flow of water necessary; main requirement is semi-skilled labour.
			Tyres (Biocycle)	Kalyan—Ambernath or Poona, Greater Bombay. Rubber Footwear and other goods— Kalyan, Ambernath area, Sholapur, Poona and Ahmedabad. <i>Latex goods—</i> Can be manufactured on a cottage scale.