

GOVERNMENT OF INDIA  
DEPARTMENT OF INDUSTRIES & SUPPLIES



REPORT  
OF THE  
PANEL ON "COIR, ROPE, CORDAGE AND  
OTHER FIBRE INDUSTRIES".

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# GOVERNMENT OF INDIA

## DEPARTMENT OF INDUSTRIES AND SUPPLIES

### PANEL ON "COIR, ROPE, CORDAGE AND OTHER FIBRE INDUSTRIES."

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## R E P O R T

### Introductory

In pursuance of the express policy to promote the rapid industrialisation of the country, the Government of India constituted a number of industrial panels, whose functions were detailed in a "General Directive to Industrial Panels"—reproduced *in extenso* below—issued on the 29th January 1945 and revised on the 15th August 1945:—

It is the function of panels to make recommendations to Government regarding the development of industries, both existing and new. The recommendations should be so framed as to enable Government to prepare a detailed-phased plan for the five years following the cessation of hostilities, as the first stage of a 15-year plan of industrial development for the whole country.

2. In order to assist them to formulate recommendations, panels will be supplied, as far as possible, with factual information prepared by the panel secretaries. In the case of new industries, the information will consist of a general survey of the industry and the importance of starting it in India, the availability of raw material, the power requirements, the demands of the Indian markets and the probabilities of exports. In the case of existing industries, the information will naturally be more comprehensive; it will indicate, in addition, the location of existing units, the types of goods produced, the total production under each category and the assistance, if any, given by Government. These items are to be regarded as illustrative and not exhaustive.

Government will give each panel, as a basis, for discussion, the provisional target to be aimed at in the first five-year period and, wherever possible, of the target to be reached in 15 years.

3. The recommendations of the panels should cover the following points:—
  - (1) The scope and extent of development, including the type of products recommended.
  - (1-A) The estimated requirements of capital goods together with such details of those requirements as may be available in India and how much should be imported from abroad.
  - (2) Whether the industry should be under Government ownership either on grounds of national interest or because private capital is unlikely to take it up, and if so, whether it should be wholly or partly managed by Government.
  - (3) In the case of industries to be developed other than under State ownership, the capital required for such development, whether the whole of it is likely to be available by public investment and, if not, the extent to which Government assistance may be required.
  - (4) The extent to which technical advice from abroad may be necessary.
  - (4-A) The availability and the future requirements of technical personnel so as to obtain a clearer indication of the present shortcomings and future needs.

- (5) The manner and the degree of co-operation with foreign firms considered necessary and desirable, both as regards capital and management.
  - (6) The location of the industry.
  - (7) The nature of the assistance required from Government in the form of protective duties, bounties, research grant, expert advice, etc.,
  - (7-A) The relative incidence of the import duty on the finished goods in comparison with the duty on the raw materials from which they can be manufactured.
  - (8) If the industry is to be under private ownership and management, what controls, if any, should be exercised by Government.
  - (9) What should be the organisation of the different units of the industry, e. g., should there be an industrial association? Would a cartel be desirable?
  - (10) The stages by which the industry should be developed.
  - (11) Should the industry cater for the export market?
  - (12) Should the industry be developed, as in Japan, on the cottage industry basis and, if so, to what extent?
4. Although, as stated above, the panels may recommend the grant of protection, it will not be their function to consider broad questions of international trade and commercial policy.
  5. Joint meetings of the panels should be held, wherever necessary, to secure co-ordination, particularly where the process and products, of one industry are connected with those of another.
  6. Some of the panels have been drawn broadly and it may be necessary to co-opt members for dealing with specific branches of the industry. Members may be co-opted by the Chairman in consultation with the Industrial Adviser.
  7. Before submitting recommendations, panels should consult Provincial Industrial Committees, particularly in the matter of location of industry. They should also, where the circumstances of the case require it, consult Industrial Committees in States or States Governments/Durbars. The recommendations should be submitted to Government through the Industrial Adviser.

2. In his circular letter No. F. 35(1)/45-1, A. dated the 12 November 1945, to all members of Industrial Panels, the Industrial Adviser issued the following explanatory instructions with special reference to items (7) and (7-A) of para 3 of the above General Directive:—

One of the points on which panels are expected to make recommendations is the nature of the assistance required from Government in the form of protective duties, bounties, research grants etc. The question has been raised whether this item calls for a detailed investigation by panels on the degree of protection required and recommendations thereon. What is required from the panel is only a broad indication that protection would or would not be required by an industry and not detailed recommendations which should be left to the Tariff Board to determine. It would not therefore, be necessary for panels to investigate the costing of individual firms or to make any other elaborate investigation of the conditions of particular firms for the purpose but to base their recommendations on the broad facts of the industries with which they are concerned.

2. The relative incidence of import duty on finished goods in comparison with the duty on the raw materials from which they can be manufactured is another point on which panels have to make recommendations. So far as this point is concerned, Government merely expects that where the panels consider that the relative incidence of import duty on finished goods and their raw material is hampering or likely to hamper Indian industry, they will recommend that the matter be examined by Government. The panels need not themselves examine and make precise recommendations on what rates of import duties might be levied.
3. The "Coir, Rope, Cordage and other Fibre Industries" Panel, consisted of:-

- Mr. K. C. Karuna Karan (Chairman), Managing Director, The Alleppey Company Limited, Alleppey, (Travancore State)
- Mr. W. Grant, Messers, Aspinwall & Co. Ltd., Cochin.
- Mr. S. Ratnam, Deputy Secretary, Finance, Department Government of India, New Delhi.

Mr. Mahmood was first appointed as the Secretary of the panel. In May 1945, Mr. Humayun Mirza, Assistant Industrial Adviser, Department of Planning & Development, Government of India, was appointed as the Secretary in the place of Mr. Mahmood.

4. The factual note prepared by the Secretary was ready on the 24th August 1945 and after its perusal by the Department of Planning and Development, a questionnaire was issued to the Directors of Industries & Commerce in Madras, Bengal, Bombay, Travancore, Cochin, Orissa, Mysore and Bihar with the request to furnish their answers and statistical data in forms prescribed which consisted of six detailed statements. Not all, however, were able to adhere to the prescribed form. In addition the Directors were requested to provide information on, and their reaction to, the following points

- (a) Short description of existing organisation, both factory and cottage.
- (b) Assessment of present growing demand and uses—diversion in the export destinations compared with pre-war destinations.
- (c) Methods to be explored for retaining the American and Canadian war-time markets for cheap coir floor-coverings which took the place of the pre-war imports of Japanese, Chinese and Javanese weed and grass mats.
- (a) Exploration of possibilities of exporting only finished goods—Empire countries should not encourage importation from Belgium and Holland (Mc-Kenna duties)—shipping freight advantage as between baled coir yarn and finished matting should be levelled out in favour of the Indian industry.
- (e) Assessment of the possibilities of competition from Ceylon, West Indies, Malaya, Dutch Indies and the Philippines.
- (f) Domestic market not fully exploited—production for local consumption should be increasingly attempted e. g., Bengal can perhaps produce all yarn which it now imports from Travancore, thus leaving Travancore free for catering to the export market. Existing position and developmental possibilities.

- (g) Proposed targets for production.
- (h) Certain aspects of production should continue on a cottage basis and mechanical production is possible only in better grades of matting.
- (i) Investigation of possibilities of mechanical or semi-mechanical spinning on a cottage basis now that hydro-electrical power is widespread.
- (j) Establishment of roperies.
- (k) Manufacturers to pool arrangements in regard to the submission of samples for export.
- (l) Institute for training technicians as also for research.

5. With the material available, the Panel, at its Preliminary Meeting held at New Delhi on 12th March 1946, discussed the various aspects of the problem before them and decided the lines on which the Report had to be prepared. In this Meeting, the Panel had come to certain definite conclusions and the present Report is based on them.

6. In accordance with the Panel's desire, the Secretary, in the course of his visit to South India, halted for four days in Alleppey, from the 12th to the 15th May, for drawing up the final report. Throughout the report, attention is directed to the present position; and trends of development are illustrated by comparison with pre-war data. These form the basis of the Panel's recommendations for the future development of the coir industry in a systematic and organised manner.

7. The information contained in the Report about the various coir-producing Provinces and States is drawn from the data furnished by the concerned Directors of Industries & Commerce, to whom the Panel is indebted.

8. It is necessary to mention here that the Panel was originally constituted for "Coir, Rope and Cordage", but by letter No. F. 11 (1)-I. A./45 of the 17th April 1945 from the Industrial Adviser, the scope of the Panel was enlarged to cover "Coir, Rope, Cordage and other Fibre Industries" and the title of the Panel was altered to "Panel on Coir, Rope, Cordage and other Fibre Industries".

9. The collection and compilation of factual information and statistical data relating to a scattered and widespread industry like coir demand not only intelligence but also patience and diligence. Mr. Humayun Mirza, the Secretary of the Panel, has tackled this part of the problem with thoroughness and success which was of considerable help to the Panel; also, in the preparation of the Report, the assistance of Mr. Mirza is much appreciated.

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## I. COIR INDUSTRY

10. The coir is the fibre extracted from the husk of the coconut which is grown roughly within the tropical zone. That coconut palm flourishes on sandy soils along the sea coast which is its natural habitat, but it thrives also on other soils in the hinterland. For proper cultivation well-distributed rainfall is essential. Generally speaking, the coconut grows in areas up to an elevation of 2,000 feet above the sea level. The palm begins to flower under suitable conditions in the fifth year and attains full bearing from seven to twelve years of planting. In the main coconut areas, the economic life of the population is almost entirely dependent on the coconut palm.

11. The following statement shows the distribution of the area under cultivation and production of coconuts:—

(a)	Acres (in millions)	No. of coconuts (in millions)
Philippines (1936-37) .....	1.57	3,500
Netherlands East Indies (1937) .....	1.50	3,200
India (1938-39) .....	1.50	3,000
Ceylon (1929) .....	1.10	1,800
British Malaya (1940) .....	0.64	850
British South Sea Islands (1929-30) .....	0.57	750
Others .....		900
		14,000

(b) Distribution of the area under cultivation and production of coconuts in respect of India.

	Area in acres	Total in acres	production percentage	Total percent- ages
<b>BRITISH INDIA</b>				
Madras (1943-44)	605,765	696,193	41.3	46.3
Bengal (1938-39)	31,300		1.4	
Orissa (1938-39)	30,021		1.8	
Bombay (1942-43)	29,197		1.8	
<b>STATES</b>				
Travancore				
(1938-39)	584,736	821,974	37.8	53.4
Mysore (1944-45)	170,180		11.3	
Cochin (1938-39)	67,058		4.3	
<b>OTHERS</b>				
(British India & States)		7,592	...	0.3
		1,525,759		100.0

12. It will be noted from the statement that Madras, Travancore, Cochin and Mysore account for the bulk of coconut areas in India. So far as the Madras Presidency is concerned, the main coconut area is in Malabar. Travancore and Cochin States and the Malabar District of Madras, which constitute the tract usually described as Keralam, account for over one million acres. This area lies along a narrow strip of territory between the Western Ghats and the Arabian sea. One of the special feature of this area is that there are vast stretches of backwater fed by river and connected with the sea at points.

13. For the extraction of coir fibre from the husk, fresh husk is to be retted. Retting facilities and nearness to backwater, therefore, play a very important part in the production of coir fibre. This accounts for the development of the coir industry in the Travancore and Cochin States and Malabar where retting facilities are available. The husks have to be kept under water for a period of six to ten months before they can be soft enough for the extraction of fibre. Brackish water with scour offers the most advantageous place for retting of husks. This accounts for the fact that the best varieties of coir yarn are produced in Travancore, where natural facilities are so plentiful. As stated before, there is a vast stretch of backwater along the coast belt of Malabar which is connected with the sea at certain points and it is along this belt that coir yarn production is almost entirely carried on. Coir fibre can also be extracted — and this method is adopted where there are no backwater areas suitable for retting — by either burying the husks in sandy soils or keeping them in small pools of water. The husks so treated for a short period only yield a type of coarse fibre with large admixture of pith and it is also of brown colour. This is a low grade fibre.

14. Fibre extracted from properly retted husks is of a light golden colour, clean and free from pith and other impurities. The better quality of fibre is used for various purposes. It is spun by means of wheels or by hand into coir yarn which is extensively used for mattings, rugs, carpets and other floor-coverings. From the high grade fibre, fibre mats of value are also manufactured. From the coarser varieties of coir fibre, coir mats of cheaper quality are manufactured. The coir yarn is also used in the manufacture of rope and cordage.

15. There has been practically no research on the methods of retting and the extraction of fibre although various experiments have been made for scientifically treating the husks with a view to avoiding the long period required for retting. Some of these experiments have been successful, but whether these scientific methods could be adapted on a commercial scale cheap enough to produce coir yarn at economic levels has to be tried. The Research Laboratory of the Travancore University has been experimenting on the production of coir fibre and it has been able to evolve certain methods of production. They have, however, not been put to commercial use.

16. On account of resistance to rot and also to white ants to a large extent, coir fibre has immense prospects amongst the various fibres of the world, apart from its use in the manufacture of floor coverings and rope. The present War has shown that coir can be utilised



for various purposes one of which is in the making of roads or producing a good wearing surface. The use of coir in the preparation of protective lagging materials for underground pipes, such as gas, oil or water pipes and cables, subjected ordinarily to the corroding influences of bacteria, electrolytic action for tramways, etc., and chemical corrosion from the clay and soil itself in which it is buried, has successfully passed the experimental stage.

17. The retted husks, after washing for the removal of mud and other impurities, are beaten with wooden mallets. This is mostly done by women in and around their homes. The fibre so extracted is cleaned and dried in the shade and willowed and is then ready for spinning into coir yarn or for the manufacture of superior mats. On any average, husks of 3,500 to 4,000 nuts yield a candy of coir yarn in Travancore (Candy = 672 lbs.)

18. The production of coir yarn in Travancore, Cochin and Malabar is also on a cottage basis. The yarn is spun either by hand or by means of two wheels, but the latter is the more prevalent method. The yarn spun by hand is of soft and even twist, while that spun on wheels is hard twist and not so even as hand spun. This difference in method of production gives the basis for classifying coir yarn as "hard twist" and "soft twist". In the spinning of coir yarn as in the extraction of fibre, women and boys and girls find employment. The well-known varieties of coir yarn produced in Travancore, Cochin and Malabar and known to the trade are :—

- |            |   |   |
|------------|---|---|
| Travancore | { | 1. Anjengo Superior (Hard twist)              |
|            |   | 2. Anjengo ordinary or Mangadan (Hard twist). |
|            |   | 3. Ashtamudi (Hard twist).                    |
|            |   | 4. Alapat (Soft twist).                       |
|            |   | 5. Aratory (Hard twist)                       |
|            |   | 6. Vycome (Hard and Soft twist).              |
|            |   | 7. Beach (Soft twist)                         |
| Cochin     | { | 8. Fine Weaving Yarn (Soft twist).            |
|            |   | 9. Rope Yarn (Soft twist).                    |
| Malabar    | { | 10. Beypore yarn.                             |
|            |   | 11. Quilandy yarn.                            |
|            |   | 12. Calicut (Fine Unsoaked).                  |
|            |   | 13. Div yarn (from Laccadives and Maldives).  |

The Beach yarn is a low grade product as the husk from which it is produced is not properly retted and sometimes not retted at all. It contains a large quantity of pith and is of a reddish brown colour. The tensile strength is also low.

19. The yarn produced in the spinning districts is marketed—there are a number of middlemen in this field—chiefly in Alleppey where there are a large number of factories for the manufacture of mats, mattings, rugs and carpets and also exporters of yarn to the Indian and overseas markets. Export of yarn to overseas market is invariably in hydraulically pressed bales of 3 cwt. each. Exports to Indian markets is in hand-made bundles.

20. Mats and mattings are manufactured on wooden looms which are similar to those used for other textiles and are operated by manual labour. Mats, mattings, rugs and carpets are made in a large variety of exquisite designs and patterns and offer a useful, damp-proof and pleasing floorcovering. Although there are several large-scale factories for the manufacture of mats and mattings, there are a very large number of small industrial establishments which are on a cottage basis as in cotton weaving. Altogether there are about 361 establishments in Travancore, large and small, employing approximately 30,000 workers. Although Travancore is the chief manufacturing centre, there are a few factories in Cochin and Malabar. As in the production of coir yarn, the cottage aspect of the industry is an important factor in the economics of this industry which should not be lost sight of.

21. Following are the estimates of production of Coir—  
 Manufactured and unmanufactured :—  
 Estimates of Production of Coir—Manufactured and Unmanufactured.

Madras	—	...	25,038 tons
Travancore	...	...	80,000 "
Cochin	—	...	17,000 "
Mysore	...	...	not available
Bombay	...	...	63 tons
Bengal	..	...	225 "

22. Being a cottage industry spread along the whole sea coast, production figures are difficult to obtain and no attempt has been made so far to make a census of production. Production figures are therefore only in the nature of estimates based on exports. So far as Travancore is concerned, the average production of coir during the pre-war period is estimated at 80,000 tons a year. Production during the War period has considerably dwindled mainly owing to the shrinkage of the usual markets, shortage of labour due to recruitment for military purposes and inadequate return for labour.

23. Coir yarn, mats, mattings and rugs produced in Travancore are exported through Alleppey, the main port of shipment in Travancore, and also through the port of Cochin, so much so that if exports from Travancore through Alleppey and overland routes are taken along with the exports through Cochin, there would be some duplication. The best method of ascertaining more accurately the volume of export from Travancore and Cochin would be to take the combined figures of exports from Alleppey and Cochin. Separate figures to show Cochin production are not available but it is estimated at 5 per cent of the total for Travancore and Cochin. Figures for railborne trade are also not available. These factors have to be borne in mind in making estimates of production. Statement I gives the shipments of coir fibre, coir yarn, coir rope and mats and mattings from the ports of Alleppey, Cochin, Calicut and other Malabar Coast Ports, which are the principal centres of the export trade.

24. The following tabular statement gives the extent of the Coir for War Purposes War orders :—

	1942	1943	1944	1945 (estimated)
<b>Rope :</b>				
Length (in ft.)	42,54,000	1,24,50,000	54,00,000	24,00,000
Value Rs.	29,000	1,35,000	2,36,000	1,50,000
<b>Fibre and Yarn.</b>				
Weight (in tons) (1 ton=2240 lbs)	Nil	1,900	1,200	5,000
Value Rs.	Nil	3,61,000	3,10,000	14,00,000
<b>Mats and Matting.</b>				
Area (in sq. yds.)	Nil	29,15,000	18,50,000	13,00,000
Value Rs.	Nil	28,12,000	15,90,000	20,00,000
<b>Tentage components (Salitahs Large, Bags of various types for packing tent poles etc.)</b>				
Numbers.	2,32,000	4,00,000	18,00,000	10,00,000
Value Rs.	11,80,000	5,37,000	44,90,000	23,00,000

25. The above War orders represent direct Government of India purchases : 25,000 tons (which include His Majesty's Government's purchases) were exported to foreign countries and 33,000 tons (inclusive of indirect purchases for war purposes) were used for internal civilian consumption. Direct Government of India purchases in 1945 were 12,000 tons.

26. From the aspect of being their chief industry, Travancore Loss of Export markets Cochin and Malabar had in the early stages of the war suffered very badly owing to loss of their export markets. This position had to a very great extent righted itself, and prices of coir ropes and other articles now are very high. There is no reason to think that coir would not be in a position to recapture all its markets after the War. The rope manufacturers are interested in their export trade, which had been principally in the East, to the ports of Akyab, Penang, Rangoon, Saigon, Bangkok, Shanghai, etc. The aspect would have to be borne in mind in any scheme of reconstruction in the immediate future.

27. Prior to the War, the principal markets for coir mats and mattings were, in the order of their importance, the Markets for Coir and Coir Products United Kingdom, Australia and New Zealand, the United States of America, Africa, Holland, followed by almost all countries in Europe except U.S.S.R., Italy, Greece and a few others. The Middle East countries and India also absorbed a considerable quantity of these manufactured articles. As regards, coir yarn, practically all countries in Europe, the Middle East, United States of America, Africa, Australia and New Zealand were importing substantial quantities. The accompanying statement II gives the proportion of off-take by various countries of manufactured coir goods and coir yarn during 1937-38. It will be seen from the statements that the United Kingdom was our principal market. Some of the countries which were importing large quantities of coir yarn have their own manufacturing industry, chief among them

being Holland and Belgium. The United Kingdom also has a few factories for the manufacture of coir matting. The comparative unevenness of the coir yarn and the difficulties and cost of adapting it to mechanical means of manufacturing Ropes and Cordages have to a certain extent checked the growth of the manufacturing industry in other countries.

28. During the War, the United Kingdom reduced her off-take very considerably whilst almost all the European markets were lost to us. Restrictions on the import of mats and mattings were imposed by all our importing countries on financial grounds. The United States of America with her high tariff wall, which was not a favourable market prior to the war, has now emerged as one of our important buyers. Other cheap floorcoverings, such as China grass mats, are not available and the present demand from America, and Canada is perhaps only a temporary phenomenon. But it would be essential to consolidate our position in this market making the best use of the opportunity now offered. Establishing ourselves in this and other new markets is dependent largely on quality to which the trade and all interested have to devote their earnest attention. There is also every prospect of the European countries, during the period of rebuilding, importing large quantities of coir mats and mattings, in addition to establishing factories for which purpose also they would be importing considerable quantities of coir yarn. It is doubtful whether in their present disrupted state of economy, the European countries could devote their man-power for other than agricultural operations, building and other essential industries. In any event it is very important that the position in these and other markets should be studied closely with a view to expanding our markets for the manufactured goods.

29. The panel agrees to adopt the potential production figures relating to fibre and yarn as would be given by the various Provinces/States, regarding these as the various target figures. The panel's recommendation for the post-war target is as under:—

	Existing coconut acreage.	Coir—Manufactured and Unmanufactured. (tons)
Madras ... ..	6,05,765	1,00,000
Bombay ... ..	29,197	7,500
Bengal ... ..	31,300	225
Travancore ... ..	5,84,736	1,00,000
Cochin ... ..	67,058	19,000
Mysore ... ..	1,70,180	2,400

\*These figures have been worked out on the basis of the reports furnished by the concerned Directors of Industries and Commerce.

30. Bombay and Bengal should aim at catering for local consumption leaving Travancore, Cochin and Malabar for manufacturing and exporting coir yarn and manufactures thereof; and Bombay and Bengal should attain self-sufficiency.

31. Lack of reliable data as to the present production of coir yarn precludes the possibility of making any forecast for the future. It is estimated that, with the return to normal avocations of those in the services and a general readjustment of the present War-time econo-

my to normalcy, the production of coir yarn in Travancore can be stepped up to 1,00,000 tons. The development of coir yarn in other coconut areas would depend on the introduction of improved methods of retting. During the normal times only about 60 per cent of the total quantity of husk available was utilized in the production of fibre in Travancore and Cochin; in other centres, it is much lower. Even under the existing methods of production, it would be possible to increase this quantity by means of improvement of roads, canals and rivers so as to enable the husks available in the hinterland to reach the retting areas quickly and cheaply.

32. This leads to a consideration of the practicability and desirability of introducing mechanical means of production of fibre and yarn and the use of chemical methods for retting.

Chemical and Mechanical methods—possibilities.

Reference :—

- (i) The Nanji Process,
- (ii) Elod and Thomas Process.
- (iii) Rowell Process,
- (iv) The Van der Jagt Process, and
- (v) The "H. G." Process, with ionised oil

The Director of Research, Travancore University, has evolved certain methods of scientifically retting the husk and extracting fibre from such husk. Assuming that this may become a commercially workable proposition, it has the decided advantages of saving time. More important is the possibility of utilizing all the available husk in the country for the extraction of fibre. There are also other processes, some of which have been patented, for the softening of the husk by the use of chemicals. The commercial possibilities remain to be tested in relation to the cost and availability of the chemicals required. Recently, the Director of Research of the Travancore University obtained certain information regarding the equipment of machinery for breaking up the husks by mechanical means and extraction of fibre and also spinning of coir yarn.

33 In adapting mechanical or chemical means of producing fibre, the following points, among others, deserve serious consideration :—

(a) The industry is now spread along the Malabar Coast and is, entirely a cottage industry. Introduction of machinery or chemical means would disrupt the existing village economy. When industrially we are not advanced enough to absorb the unemployed population, it is not good, in the opinion of the Panel, to introduce either machinery or chemical means that would deviate from the cottage character or characteristics, as it were, of the coir industry. There are about 100,000 families in Travancore dependent on this industry for their living.

(b) Supposing a factory is established in some central place, is it a practical and economic proposition to transport all the husks to the factory to be converted into coir yarn? The Panel is of opinion that it is not so in the present circumstances.

34. Without disrupting village economy, if it is possible to introduce some cheap and easy machinery worked by manual labour, such as ginning in cotton, it would considerably remove the tedium of this process and help lighten the burden of workers in this very laborious process. Immediate research should be directed to this end

35. On the marketing side, reports reveal the existence of a multiplicity of middlemen. If an industry in which the unit of production is so small, the presence of middlemen is an inevitable phenomenon. This can be modified only by the organization of co-operative societies to which it is understood the Registrar of Co-operative Societies in Travancore is already devoting his attention. It may be a slow process, but has to be quickened.

36. On the point of the improvement of coir yarn, the Panel is of opinion that for the time being, generally grading should be confined to describing well defined qualities and to estimating the moisture content and the foreign matter content. Towards such improvement and with a view to affording finance facilities for the producer, the Travancore Government have sponsored a Licensed Warehouse Bill. It is hoped that the Government will immediately follow this by a Grading Act.

37. Statement I showing the shipments of coir yarn and manufactured coir goods will reveal the proportion of shipments of raw materials in relation to shipments of manufactured products. Whilst the raw product may be used in the importing countries for other uses than in the manufacture of mats and mattings, it is necessary to ascertain the position accurately and take such steps as are necessary and possible to develop the manufacturing industry in the country of production of the raw material. At any rate, this should be kept as an objective in the post-war policy for the coir industry. This is not altogether wrong on economic grounds as it is one of the orthodox economic canons that the fostering of an industry should be based on the availability of raw materials at hand.

38. Consideration has also to be given to, and a study made of, the possible sources of competition to the coir industry

(a) Already Ceylon is producing coir fibre, her annual output being approximately 12,000 tons. This fibre is mostly used as bristle fibre, not being soft enough to be spun into coir yarn. But a certain quantity of coir yarn is also being produced in the island amounting to 5,000 tons approximately. With the retting facilities now available in Ceylon and improvement in the method of harvesting nuts, there is every possibility of Ceylon being able to increase her production of fibre and yarn. Ceylon has also started manufacture of coir mats and mattings, though on a small scale. Under the existing methods of production adopted in Ceylon and considering the demand and future possibilities of expansion of the markets and of the uses the coir may be put to, Ceylon does not offer any serious threat to India for the time being.

(b) Jute floorcoverings are now in demand, but how far it can compete with coir is a matter which requires close study. Calcutta factories are manufacturing jute mattings on power driven looms and can increase their output rapidly and sell cheaply. The wearing and damp-proof qualities of coir mattings are considered superior.

(c) Production on a large scale of various kinds of floorcoverings out of sea weeds and grass from China and Japan was, in the prewar days, a factor to be reckoned with as a growing competition against the coir floorcoverings. Grass was *cultivated* on a large scale and under up-to-date methods in China and the production of various floorcoverings and also furniture like collapsible chairs etc. was an important cottage

industry; in Japan not only was this carried on on a large cottage basis but the Government interference in regard to inspection of qualities has pushed these floorcoverings, to a large extent, in the markets of the United States of America and United Kingdom. Apart from the nature of this scientific cultivation and the Government control given to the production of these floorcoverings, the freight facilities from China and Japan to the consuming countries played a considerable part in enabling these floorcoverings from China and Japan to enter into active competition with the coir floorcoverings imported from India into these countries. No doubt, in the prewar days the United States of America was not an important market for coir floorcoverings owing to the climatic conditions of the country, the method of use and the availability of cheap floorcoverings from other sources. In the United Kingdom grass floorcoverings were largely used not because of their superiority over coir as cheap, durable and damp-resisting floorcoverings but because of the comparative cheapness of the commodity particularly facilitated by cheaper freight. On coir floorcoverings, the freight from Malabar Coast to United Kingdom is controlled by the Conference Lines, with the result that the freight rates are much dearer than those on grass floorcoverings. The situation has become changed during the War and this change will very probably continue for four to five years. It is reported that the vast areas under grass cultivation in China are being now put under food crops. This is based on the assumption that the food situation of the World was not likely to improve within that period and there will not be available lands as in the prewar period for the cultivation of grass. Therefore in so far as competition from grass floorcoverings from China and Japan is concerned, the probability is distant.

39. We may now consider the question of competition from other hard fibres such as Manila hemp, Javan Sisal and East African Sisal etc.

Prior to the War, coir was not taken into any serious consideration as a fibre suitable for cordage purposes in comparison with Manila hemp, Dutch East Indies hemp etc. and in fact, coir was taken as one of the most lowly of the industrial fibres. It was during the War when, due to Japanese occupation of the Philippine Islands and the Dutch East Indies, Manila hemp and Javan Sisal ceased to be available, that coir began to be used for cordage purposes. It was found to be a suitable substitute and the demand for War purposes continued. It may naturally be expected that now that hostilities have ceased, the Philippines and Dutch East Indies as sources of supply will again come into existence. But the following facts have to be borne in mind in estimating the probable competition from these and other sources:—

(a) Before the War the Philippine exports of Hard hemp chiefly Manila hemp were between 150,000 and 200,000 tons, but it is unlikely that more than a *fraction* of this quantity can be exported for some time. Under Japanese occupation, some plantations have been used for other agricultural purposes, others neglected, and all of them were short of equipment—a particularly serious matter; hard hemp plantations require more equipment in the way of field railways and leaf crushing and fibre extracting plants than any other plantation industry. For reconstruction and rehabilitation of the industry in the Philippines and in the Dutch East Indies, we can safely estimate that it will take some five years.

(b) The East African production of Sisal now exceeds the prewar peak of 130,000 tons per annum, and in Mexico, Henequen hemp production has been encouraging. Experiments in some African areas and

Central America have occasionally been successful, but their contribution to supplies is so far small. Unfortunately, American plans for hard hemp production have proved over-ambitious, and the 1943 acreage fell short by 24,300 acres of the programme to plant 300,000 acres for fibre and 50,000 for seeds. In 1944, it was reduced to 72,000 acres and the scheme has now been virtually discontinued.

(c) Portuguese East Africa has a considerable acreage under cotton where Sisal growing is also carried on extensively and considerable quantities exported. Portuguese East Africa and Angola on the West African Coast possess a number of indigenous fibre producing plants. The natural history and pathology of those in the latter Colony have been very thoroughly studied by and under the Direction of Senor Lara, head of the Companhia do Acucar de Angola.

(d) A scheme for the commercial exploitation of many fibre plants is in progress in Columbia under sponsorship of the National Institute of Development. Trial plantings of fibre plants have been made by the Columbian Bank of Industrial Development and it is thought that domestic cultivation should be able to cover some of Columbia's textile requirements and provide an export surplus.

(e) The short supply of hard fibres is seen by the wider use of Abaca fibre, grown in British North Borneo in the manufacture of Rope now permitted in the United States of America. This will replace a like quantity of Sisal. The change has been made following a drop in shipments of Sisal from British East Africa as a result of the discontinuance of the Combined Raw Materials Board. The fact that the United States of America has recently allowed Manila Rope to be manufactured in  $\frac{1}{4}$ " diameter ( $3\frac{1}{4}$ " in circumference) indicates the short supply of Manila fibre from Philippines.

(f) The attempts made in Chile, Palestine, Cyprus and Italy to grow hemp on a large and extensive scale are to be carefully noted. The cultivation of piteira fibre in South America has to be specially noted. This fibre resembles Sisal in several ways. The fibre is however noted, as when compared to Sisal, but it is possible that the relative softness of Piteira fibre might enable it to find uses not generally available to the hard fibres, to which group it belongs.

40. The conclusion that has to be drawn from the above factors is that only East African Sisal will be of any material factor to the world's supply among hard fibres. For constructional and other purposes, when the demand for Cordage is so immense, the East African production is not likely for some years to be a material factor to be reckoned with.

41. Against the above favourable background for Coir during the four to five years from now, serious consideration should be given in drawing up a 15 year plan of industrial development for the whole of India as far as hard fibres are concerned. The cultivation of industrial fibre plants on a large scale with the aid of up-to-date machinery should engage the serious attention of the various Governments. Large uncultivated areas in India having almost the same climatic conditions as East Africa are suited for large scale Sisal plantations. The damp-resisting quality of this fibre will certainly play an important part not only in the manufacture of Rope and Cordage, but also in that of cheap floorcoverings.

42. The greatly increased use of synthetic fibres is a factor to be carefully watched in future. Such costly synthetic fibres have not yet come into any great prominence in the Rope, Cordage and cheap

Post- War  
Development



floorcovering industries. But it may be possible through intensive research to produce synthetic fibres, which may, with advantage, be used in these industries. Recently American Viscose Corporation obtained a patent in the United States of America for producing Cellulose other than in the form of separable fibres for use in the Cordage industry.

43. In considering competition, cost of production will be a governing factor. Before the war, in China and Japan, labour was paid very low and made to work for long hours, and in some cases, the wage rates are reported to be less than that in the coir industry. Although China and Japan were members of the International Labour Organization, sweated labour prevailed in the grass floorcovering industry. This state of affairs will never recur now under the influence of the United Nations Organization and we can safely expect that such sweated labour will not be permitted in future.

44. Apart from the considerations of Competition, the usefulness of coir has now become well-established and there is no question that its popularity in the buying countries will continue in the future provided sufficient consideration is given to quality. Reports in the British Press show appreciation of the coir floorcoverings as a material possessing a high degree of damp-resisting and hard-wearing qualities.

45 Active steps for stepping up production of coir in India should be taken up immediately. Improvement in transport facilities to enable husks from the hinterland being brought to soaking pits has been suggested already as one of the means to attain this end. Ways and means should also be explored for producing coir locally in the various coconut producing areas in India where natural retting facilities do not exist. It is possible that in irrigated areas, husks can be soaked and coir produced. These are matters, which should engage the attention of the Governments concerned. With the development of production of coir in the coconut producing areas, the local demand for coir as fibre and as yarn could at least partly be met and this will enable Travancore, Cochin and Malabar to explore fresh markets for the manufactured coir goods and expand existing ones. An intensive drive should also be made, in any case, for the improvement and expansion of coconut cultivation.

46. Another point which requires immediate consideration in connection with the improvement of the coir industry relates to marketing. In the preliminary stages, it is a fact that there are quite a number of middlemen and the spreading of the Co-operative Movement will be a good corrective. This point has already been dealt with earlier in this report. But in regard to marketing at the consuming centres, coir has not been placed on a proper footing. In fact, it is not quoted in the London commodity market at all. It is contended that the qualities are so various that it is not possible and would in fact be misleading to quote prices.

47. The correctness of such a contention has to be examined carefully before it can be accepted. But it has to be conceded that there is no scientific grading of this commodity which is necessary for coir being quoted in the commodity market and marketed under very well-known procedure. Today, the marketing of coir in Great Britain usually takes the form of the buyer visiting merchants office where business becomes a matter of negotiation. This is a procedure not entirely unknown with other commodities. Better prices can be obtained, if proper grading is adopted. If the absence of grading stands in the way,

then it might be taken as further evidence as the desirability of solving the garding problem. Without clearly defining grades, and without public prices the future of the most meritorious commodity must be handicapped.

48. The possibilities of establishing roperies in Cochin, Travancore, Malabar and Bombay should also be studied with a view to expanding the manufacturing industry in the country and absorbing more of the raw material.

Roperies

The Panel is of opinion that for an economical ropery not merely coir but also other fibres such as manila, sisal, hemp and Jute should be made readily available.

49. It may be noted here that coir machinery has not received the amount of attention from textile machinists which has been accorded to certain of the other hard fibres. From time to time substantial developments are promised, as for example the Van der Jagt decorticator and the Hayes—Gratze process which employs ionization for separating and softening the fibre. But the innovations have, to date, failed to secure general acceptance.

Improved  
Machinery in  
manufacture

50. A certain amount of work has been done at Leeds by Fairbairn Lawson Combe Barbour more especially in connection with spinning, while the Suffolk firm of Messrs E. W. Downs & Son is one of the very few concerns which cover coir machinery needs from several angles—decortication, bale opening, cording and cleaning equipment for preparing mattress fibre and machines and implements for the production of coir mats and mattings.

51. Above all, the possibilities of coir are so great and experiments so far made so few that there is an urgent need for the establishment of a Coir Textile Institute for the study of coir in all its aspects. From the agricultural point of view the cultivation of the coconut has received a great deal of attention, but when compared to other animal, vegetable and synthetic fibres, the fibrous product of the coconut palm has received very scanty attention at the hands of Research scientists.

Research

52. The scattered nature of the industry and the small units involved are mostly responsible for the lack of research in the various stages of the coir industry. Recent years have proved the various uses to which coir could be put. The place of coir in the world fibre economy has come to stay. What is needed today is intensive research, particularly in the early stages of the industry. This search must be internal as well as external. Internally the aim must be to observe, measure and record everything connected with the problem so that when knowledge is obtained from outside, it could be applied to what is inside. Externally the search must be in scientific institutions and among suppliers of materials or machinery.

53. It is advisable for the industry, with the close co-operation of the Government to possess a Co-operative Research Institute. If an item of knowledge is located at such a Co-operative Research Institute, it should be presumably available to all members, large and small.

54. It is felt that the whole Coir Textile Industry would benefit if at least one person properly trained were available in every Mill or Factory. It is suggested that opportunities be given to students who

wish to train for such qualification. A close interest is to be taken by the Institute in the provision of standard text books and works of reference and a more thorough going approach be made for standardization of terms, definitions and methods.

55. The fact that coir, properly treated, resists decay, is not disintegrated by bacteria nor harmed by water, and can be easily impregnated with bituminous and resinous materials provides a unique opportunity for exploiting its uses in directions hitherto untried in commerce or industry; but modern industry must have a scientific foundation and fundamental characteristics of coir must be explored by scientific research, if, as with coconut oil, knowledge is to be yielded for its development in new directions.

56. In the foregoing paragraphs, we have dealt with the several aspects of the coir industry. We propose now to deal with certain other points which arise for consideration under the terms of reference to this Panel.

57. It will be clear from the general discussion and the present organization of the industry as detailed in previous paragraphs that the coir industry does not hold a key position such as will justify Government taking it over under its ownership either on grounds of national interest or because private capital is not available. Indeed, the coir industry is fundamentally a cottage industry and spread over practically the whole of the coastal region of Travancore, Cochin and Malabar. The production of coir yarn does not stand in need of any large capital investment and the improvement which have to be made on its present organization relate to co-operative effort and better marketing methods. In the manufacture of coir mats and matting, which is more on a factory basis, the industry has become well-established through several decades and capital has never been found to be shy. There are certain weak points, no doubt, in the organization of the industry in respect of the manufacture of coir mats and mattings. The problems facing the industry have been well understood and the larger manufacturers have established an association by the name of The Travancore Coir Mats & Matting Manufacturers' Association which has been recognised by the Travancore Government. It is a body incorporated under the Travancore Companies Act by virtue of a licence issued by the Travancore Government. A similar association exists in Cochin also. Assistance of the Government towards a better organization of the industry may be required but it is a matter which should be left to the industrialists themselves to seek. Moreover, in addition to several larger factories, many small industrial establishments, working more or less on cottage basis, have come into existence. The problem of the industry is therefore one of organization and definitely not one such as will necessitate Government ownership.

58. In the coir mats and matting manufacturing industry, there already exists a certain amount of co-operation as the Association referred to in the previous paragraph consists of both Indian and European manufacturers. Indian enterprise has never been lacking in this industry which does not therefore stand in need either of foreign capital or of management for its future progress.

59. In the appropriate places, we have recommended the form of Government assistance which may be required by the coir industry and it does not appear to be necessary to repeat them; but it would not be out of place to recapitulate here our main recommendations in this respect.

(a) Improvement of communications with a view to facilitate the transport of fresh husks from the producing areas to the soaking pits, thereby increasing production of coir yarn.

(b) Improvement in marketing methods and legislation for establishment of Licensed Warehouses and grading will result in the improvement of the quality of coir yarn. Establishment of Licensed Warehouses will also increase the financial facilities.

(c) The Co-operative Departments of the Governments concerned should take an active part in the promotion of Co-operative Societies in connection with spinning and marketing of coir yarn.

(d) Suitable policy which will ensure the fullest utilization of the raw material in the manufacturing industry to the extent possible should be adopted by Governments concerned.

(e) Endeavour should be made by Governments concerned to secure a reduction in tariffs in countries importing coir mats and mattings. In certain countries (e. g. Australia) the import duty on coir mats and mattings is found to be higher than certain other floorcoverings which is a handicap to the coir industry. Governments concerned should endeavour to remove such handicaps.

(f) In the present stage, no protective duties or bounties are required for the development of the coir industry. The Government of Travancore have for fiscal purposes a duty on the export of coir yarn.

(g) Co-operation and financial assistance of Government for research purposes would be very helpful. We have recommended the establishment of a Co-operative Research Institute in paragraph 53.

60. Of late there have been criticisms regarding the quality of manufactured coir goods exported which seemed to suggest the desirability of some form of Government control regarding quality. There is always serious difficulty accompanying the establishment of Government controls for licensing of quality etc. Ethics in trade should ordinarily be based on some code agreed upon by a voluntary association of manufacturers and exporters. Such being the case, Governmental controls for ensuring proper quality are not desirable unless it is proved that the conditions in an industry are so chaotic that they become a danger to the industry itself. The maximum interference by Government in regard to the coir mats and matting industry is perhaps needed only for the purpose of compelling all manufacturers to form into an association or associations which should be left to prescribe their own codes for the maintenance of proper grades and standards for the products manufactured and exported. Beyond this, the industry does not seem to need any control from Government.

## II ROPE

AND

## III OTHER FIBRE INDUSTRIES

61. As regards the consideration of the "Rope Industry" and "Other Fibre Industries", the Panel is of opinion that as at present constituted it could make no important contribution to the development of the Rope Industry (other than the coir rope industry) and "other fibre industries". Some of these fibres are still in the agricultural or experimental stage of their development and are not as yet cultivated intensively to be "industrially" important.

S.d.) K C. KARUNA KARAN  
(CHAIRMAN)

(Sd.) W. GRANT (Subject to  
Notes attached)

Sd ) HUMAYUN MIRZA  
( SECRETARY )

(Sd.) S. RATNAM

## Summary of Recommendations.

1. The Panel decided to confine its attention to the Coir Industry merely (and Rope, in so far as it is of coir manufacture) for the reason that the various indigenous fibres were not grown sufficiently extensively to admit of their utilization to any marked degree in any industry of note.

2. The Panel has adopted the following targets -

	<i>Coconut Acreage</i>	<i>Coir (Manufactured and Unmanufactured) (tons)</i>
Madras . . .	6,05,765	1,00,000
Travancore . . .	5,84,736	1,00,000
Mysore . . .	1,70,180	2,400
Cochin . . .	68,895	19,000
Bengal . . .	31,300	225
Bombay . . .	29,197	7,500
	14,90,073	2,29,125

Bombay and Bengal should aim at catering for local consumption leaving Travancore, Cochin and Madras (Malabar) for manufacturing and exporting coir yarn and manufactures thereof. Bombay and Bengal should attain self-sufficiency.

3. *Steps for improving the Coir Industry* :—

(i) *Methods for improving production.*

(a) As husk is only partially utilised in the production of fibre (60% in Travancore and Cochin and even much less in other centres—0.06% in Bengal, 3/4% in Bombay), it is most important that all the available husks should be utilised ;

(b) Improved communications—roads, canals, rivers—for enabling the husks in the hinterland to reach the retting areas quickly and cheaply ;

(c) Improvement in the retting of husks by chemical and mechanical methods so as to make it a commercial proposition and at the same time not disrupt the existing village economy. If the cottage character of the industry is departed from and a factory is established even in some central place, it would not be a practical and economic proposition to transport all the husks to such a factory. What would be most desirable is the introduction of some cheap and easy machinery, as ginning in cotton, for removing the tedium and burden of the process from the cottage worker ;

(d) Husk (fresh) should be properly retted so as to produce high grade fibre for converting into yarn for the production of various kinds of manufactured goods ; and

**(ii) Methods for improving quality :—**

On the point of the improvement of coir yarn the Panel is of opinion that for the present grading should be confined to describing well-defined qualities and to estimating the moisture content and foreign matter content. Towards such improvement and with a view to affording finance facilities for the producer, the Travancore Government have sponsored a *Licensed Warehouse Bill*. It is hoped that the Government will immediately follow this by a *Grading Act*. Better prices would be obtained in consuming centres like London and elsewhere, if proper grading is adopted. Without clearly defining grades and without public prices the future even of the most meritorious commodity would be handicapped.

**4. Factors in Competition in the Post-war Period****(i) From Manufactured goods :—**

India should make fuller use of the raw material. Whilst the raw product may be used in the importing countries for other uses than in the manufacture of mats and mattings, it is necessary to ascertain the position accurately and take such steps as are necessary and possible to develop the manufacturing industry in the country of production of the raw material. At any rate, this should be kept as an objective in the post-war policy for the coir industry.

(a) Ceylon's annual output of coir fibre (mostly bristle fibre) is 12 000 tons. About 5 000 tons of coir yarn is also produced. Though Ceylon could increase her production of fibre and yarn, still it offers no serious competition to India for the time being.

(b) Jute floor coverings, though in demand and their output considerable in Calcutta are no match for coir mattings which are considered superior due to the wearing and damp-proof qualities.

(c) A possible source of competition in the future would be the floorcoverings made out of sea weeds and grass from China and Japan, not because of any inherent good quality in them but because of cheaper freights. In the 5-year period there is nothing to fear as large areas under grass cultivation in China are now growing food crops but later on the question might be considered.

**(ii) From other Raw Materials (or Hard Fibres) :—**

(a) *Manila hemp*. In the 5-year period no serious competition need be expected from manila hemp for the reason that the Japanese occupation of the Philippines has converted hemp plantations to agricultural purposes.

(b) *Sisal* from British and Portuguese East Africa and Mexico gives indications of an encouraging supply but as it will have to be diverted for cordage purposes, it will not be a material factor to be reckoned with for at least the next 5 years.

In this connection the possibilities of establishing roperies in Travancore, Cochin, Malabar and Bombay should also be considered with a view to expanding the manufacturing industry in the country and absorbing more of the raw material. The Panel is of opinion that for an economical ropery not merely coir but also other fibres such as manila, sisal, hemp and jute should be made readily available. It is desirable that manila and sisal should enter the country duty-free and a tariff imposed on imported rope. India possesses large uncultivated areas, having almost the same climatic conditions as East Africa, suited for

large scale sisal plantations. The damp-resisting quality of this fibre will certainly play an important part not only in the manufacture of Rope and Cordage but also in that of cheap floorcoverings

(c) *Synthetic Fibres.* These may yet come into prominence in the Rope, Cordage and cheap floorcovering industries

Whatever the favourable background for coir in the coming 5 years, serious consideration needs to be given in the 10- or 15-year period in respect of the development of the hard fibres.

(iii) *Cheap foreign labour :—*

Before the war, labour was paid very low in China and Japan and made to work for long hours and in some cases, the wage rates are reported to be less than that in the coir industry. Although China and Japan were members of I.L.O (International Labour Organisation) sweated labour prevailed in the grass floorcovering industry. We can safely expect that this state of affairs will not recur under the U.N.O.

### 5. *Nature of Government Assistance*

(a) Establishment of a co-operative Research Institute with the co-operation and financial assistance of Government for research purposes.

(b) As already mentioned above improvement in marketing methods and legislation for establishment of Licensed Warehouses and grading will result in improvement of the quality of coir yarn. Establishment of Licensed Warehouses will also increase the financial facilities. But this does not suppose Government controls for licensing of quality, *et cetera*. Ethics in trade had better be left to be decided by the organisation of manufacturers and exporters in voluntary association.

(c) The Co-operative Department of the Governments concerned should take an active part in the promotion of Co-operative Societies in connection with spinning and marketing of coir yarn. In an industry in which the unit of production is so small, the presence of middlemen is an inevitable phenomenon. This can be modified by the organisation of Co-operative Societies.

(d) Suitable policy which will ensure the fullest utilisation of the raw material in the manufacturing industry to the extent possible should be adopted by the Governments concerned. Nationalisation is uncalled for as private capital is not shy, the coir industry is not a key-industry and it is fundamentally a cottage industry. Matters could be righted by the introduction of co-operative methods and better marketing methods.

(e) Endeavour should be made by Governments concerned to secure a reduction in tariffs in countries importing coir mats and matting. In certain countries (*e.g.* Australia) the import duty on coir mats and mattings is found to be higher than certain other floorcoverings which is a handicap to the coir industry. Governments concerned should endeavour to remove such handicaps.

(Sd.) HUMAYUN MIRZA.

*Secretary.*



**APPENDIX A.**  
**NOTES BY MR. W. GRANT.**

**Para 29.** On re-consideration I consider these estimates even as a target are overstated, particularly outside Cochin and Travancore—

**Para 38. (c)** In connection with the comparison of rates of freight on coir mats from the Malabar Coast to U. K. and grass floorcoverings from China to U. K. is it correct to state that the cost of conveying a bundle of mats from China to U. K. is less than the cost from Cochin to U. K. I would question the correctness of this statement.

**Para 43.** In connection with the sentence, "This state of affairs will never recur now under the influence of the United Nations Organization and we can safely expect that such sweated labour will not be permitted in future". I consider this a highly doubtful expectation.

**Para 54.** I suggest that this para be deleted.

**Para 60.** I query this. The shipper of inferior quality will eventually be forced out of the market

**APPENDIX B,**  
**CHAIRMAN'S COMMENTS ON THE ABOVE.**

**Para 29.** In the 'General Directive to Industrial Panels' it is given that:--

"In order to assist them to formulate recommendations, panels will be supplied, as far as possible, with factual information prepared by the Panel Secretaries".

The paragraph in question is built up on the factual information and statistical data supplied to the Secretary of the panel by the various Provinces and State Governments. As the estimates are closely based upon this information supplied by the various Governments, I wonder how we can question these estimates.

**Para 38(c)** The statement contained in this paragraph is correct. Hong Kong is a FREE Port; but on the Malabar Coast Ports, through which Coir Mats and Mattings are exported, the Homeward freight rates are controlled by the Conference Lines. In 1935, the rate of freight from the Malabar Coast Ports to London on one hundredweight of Coir Matting Rugs was 8 shillings and the same was the rate from Hong Kong on Grass Mats of the same weight, although an extra distance of over 3,000 miles has to be covered to London. This is evidence of the statement made in paragraph 38 (c). In fact, there have been occasions, when Grass Mats were carried from Hong Kong to London at much lower rates than indicated above owing to competition between different steamship companies operating in a Free Port like Hong Kong. In this connection, I feel bound to quote the following Passage from the Report of the Ceylon Industries Commission:—

"The subject of transport facilities both internal and external is one deserving the closest attention, as it is of paramount importance in the development of industries. As regards shipping, owing to the policy of the Homeward Conference Lines giving deferred rebates of 10 p. c. the freight charges are kept generally higher than those from other countries. In South Africa and the United States, the principle of deferred rebates has been declared illegal."

This applies equally well to the Coir Mats and Matting industry.

**Para 43.** Grant considers it highly doubtful whether we can expect that in future "sweated" labour will not be permitted. This is, no doubt, a matter of opinion. But the trend of World opinion from the time of the establishment of the League of Nations and the International Labour Organization has been to abolish "sweated" labour and raise the standard of living of workers all over the World. Nations, who have been members of the League of Nations have accepted and ratified the various Conventions of the International Labour Organization relating to labour and have taken steps for improving labour conditions. The Atlantic charter and the ideals, which the United Nations Organization have set before them, provide adequate grounds for holding the view that "sweated" labour, not only in China and Japan, but in all countries of the World will not be permitted to prevail.

**Para 54.** Technical development in industries is recognised to be one of the means for their improvement. The suggestion made in this paragraph has found favour with industrialists all over India. It is one of the complaints in the coir industry especially that people, who have not acquired the requisite qualification mostly on the technical side, enter the field with disastrous results to themselves and to the industry. This opinion has been expressed in a report by a Board of Conciliation of Trade Dispute in the Mats and Matting Industry appointed by the Travancore Government in 1938.

**Para 60.** It is the experience of those in the Coir Mats and Matting Industry, that complaints regarding quality have been made for a very long time. As yet, the shippers of inferior quality have not been forced out of the market; indeed, their number is growing. Even in regard to the coir yarn shipped, official complaints have been received in regard to the quality. "Prevention is better than cure" would be the best policy.

(Sd.) K. C. KARUNA KARAN.

(Chairman).