



GOVERNMENT OF INDIA

**NATIONAL COMMISSION ON
AGRICULTURE**

**INTERIM REPORT
ON**

**CERTAIN IMPORTANT ASPECTS OF SELECTED
EXPORT ORIENTED AGRICULTURAL COMMODITIES**

**NEW DELHI
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SUMMARY OF RECOMMENDATIONS

TEA

1. The pattern of exports of tea from India suggests that there is need for making a continuing country-wise assessment of export possibilities of tea from India, not only to traditional buyers but also to the new markets.

(Paragraph 2.6)

2. The internal demand for tea has been kept at a low level by fiscal measures, to adjust exports to production. The estimates of demand for tea, on purely economic considerations, worked out by the Commission indicate that internal consumption is likely to be of the order of 532 million kg in 1985 as against the Tea Board's estimate of 375 million kg. The higher demand estimates suggest the need for an aggressive production programme for tea.

(Paragraphs 3.1, 3.3
and 3.7)

3. The entire approach to the problems of tea production has to be reoriented. The first step would be to collect, by means of survey, the basic data in respect of (a) classification of tea plantations into 'good', 'medium' and 'others'; and (b) surplus land suitable for growing tea. This task could best be done by tea associations like UPASI, Assam Tea Planters' Association, etc. in collaboration with the State Governments.

(Paragraphs 5.1, 5.2
and 5.3)

4. The scope for extension of area under tea, as revealed by the survey, in eastern States, Jammu and Kashmir as also in the South should be explored.

(Paragraph 5.3)

5. Areas capable of responding to various rejuvenation treatments and replantations including 'in-filling' should be demarcated in different States, and suitable programmes for the purpose should be taken up on a priority basis, after a thorough study of their feasibility.

(Paragraphs 5.5 and
5.7)

6. 'Good' plantations with efficient management and high yields should be allowed to expand the area in the normal way. The implications of this extension in terms of land ceilings will have to be gone into. Efforts should be made to complete expansion through 'good' plantations during the Fifth Plan period.

(Paragraph 5.8)

7. 'Medium' plantations should reach the level of good management before they are allowed to expand. Wherever feasible, additional capital and technical assistance necessary to improve yields of 'medium' plantations should be provided.

(Paragraph 5.9)

8. The 'other' plantations which include a large number of small holdings would require a special treatment. For them, a scheme on the pattern of Tea Development Authority in Kenya could be developed for Indian conditions and taken up in the co-operative sector.

(Paragraph 5.10)

9. The existing cooperatives in the tea industry which have hitherto confined their activities almost exclusively to the manufacturing aspects of tea, should be encouraged to take up production and development aspects as well.

(Paragraph 5.12)

10. The tea estates in Darjeeling area, producing high rated teas, are suffering from continuously low yields caused, among others, by heavy pluckings and soil erosion. A special consultancy service should be engaged to study the soil and other conditions and make recommendations for remedial measures. There is also a case for preferential rate of subsidy for this area.

(Paragraph 5.13)

11. Those of the sick plantations, which have potentialities for revival, should be taken up for rehabilitation either by the Government exclusively or by a collaborative programme between the existing management and tea planters' associations.

(Paragraphs 5.14 and 5.16)

12. Suitable legislation for acquiring sick plantations needs to be expedited to rehabilitate them and make them economically viable.

(Paragraph 5.16)

13. Financial assistance to each plantation should be based on its actual performance and not on State/regional yield averages. The broad objective of financing should be to build up self-generating units. The possibility of providing institutional finance to plantations, particularly the bigger ones, should be explored .

(Paragraphs 5.17
and 5.18)

14. The following criteria should be adopted in rendering financial assistance to various types of tea plantations.

- (i) programmes for extension of 'good' plantations should be financed on the basis of calculations relating to cost of extension vis-a-vis returns on the yields expected. The input-output economics of new clones should be studied;
- (ii) in case of 'medium' plantations, programmes of in-filling should be assisted if they are expected to result in improvements in yields and thus become self-paying in the long run;
- (iii) subsidy on 'small' plantations should be extended if it is considered that this investment would make them viable economic units; and
- (iv) preferential rates of subsidy for undertaking measures of land development, soil conservation, etc. should be extended in certain problem areas, e.g., Darjeeling and some plantations in South India.

(Paragraph 5.18)

15. A programme for long-term development of tea industry should be initiated by the Ministry of Commerce. In this connection, the careful exercise done by UPASI deserves attention. Suitable action should be taken for implementation of the proposals, wherever found feasible.

(Paragraphs 5.20 and
5.21)

16. The Tea Board seems to be spending less and less on internal promotion of tea. It is essential that the machinery for internal promotion is again set in motion for promoting domestic consumption of tea.

(Paragraph 5.22)

17. There is need for the Tea Trading Corporation to organise intensive propaganda campaign in favour of the qualities and varieties of tea exported from India in the potential and established markets. This apart, India should also take a lead in the FAO Standing Committee on Tea Promotion to revitalise tea promotion and bring about the creation of an adequate machinery for the purpose.

(Paragraph 5.23)

18. Several fiscal measures are required to boost up the export of tea. A study of the tariff and non-tariff barriers against tea imports in different countries would be useful for working out a specific export strategy for each country. All duties levied at the point of export should be rebated so as to get concession for good quality teas, which are being denied at present.

(Paragraph 5.24)

19. The comparatively high cost of production of tea appears to be an inhibiting factor in the export promotion drive for tea. It is essential that this aspect is examined in detail by the Ministry of Commerce.

(Paragraph 5.25)

COFFEE

20. The forecast of demand for Indian coffee in the world markets should not be made merely in terms of the postulations of the International Coffee Agreement. The scope for developing new export markets should be explored. The approach should be to estimate the broad order of the likely increase in demand, country-wise, (in terms of different types of coffee) over the next ten years followed by an assessment of the share in such demand which India can meet.

(Paragraph 6.8)

21. India should aim at a growth rate of 5 per cent or more of production of coffee in order to meet the demands projected by the Commission at 70 and 110 million kg in 1980 and 1985 respectively.

(Paragraphs 7.3, 7.4
and 7.7)

22. Plantations in the size range 2 to 10 hectares should be given proper input services and adequate extension support in order to make them viable, by bringing the small coffee growers

within the purview of the development programmes similar to the S.F.D.A. and M.F.A.L. programmes.

(Paragraphs 9.3 and 9.5)

23. A special case is that of small coffee growers of Kerala, most of whom have no legal rights in the lands occupied by them and are treated as squatters. The Coffee Board should take the initiative to enumerate and register these growers and seek early decision from the Government of Kerala and take such other steps as would entitle the small growers to the benefits of the development schemes during the Fifth Plan period.

(Paragraph 9.6)

24. Nearly 13 per cent of the holdings are unregistered and hence they are outside the scope of the development schemes launched by the Coffee Board. There is need to bring all these holdings under the Coffee Board by registration. It is essential that the Coffee Board takes the initiative and sees that all these estates are identified and registered immediately. If any change is necessary in the legislation for this or even for any penalties to be laid down, suitable changes may be made quickly.

(Paragraph 9.7)

25. The Coffee Board may also take the leadership in organising Farmers' Service Societies, advisedly, in plantation areas where small holders are thickly congregated. Facilities for hire-purchase of sprinkler irrigation and pesticides spraying equipment and other inputs should be made available to the Farmers' Service Societies.

(Paragraph 9.8)

26. As an important step to rehabilitate small plantations, the Coffee Board should, after a quick survey of the magnitude of the task, arrange to complete within two or three years, gap filling in such plantations with clones of high yielding varieties of coffee.

(Paragraph 9.9)

27. In the new areas coming under plantations and in some of the potential areas identified by the Coffee Board in Andhra Pradesh, Orissa, Assam, Tripura, Karnataka, Kerala and Tamil Nadu, small holders' coffee plantations on the pattern of the Tea Development Authority in Kenya may be systematically developed. Each holder can be allotted the minimum viable area of two hectares out of a large plantation developed by a common Corporation or annexing, where necessary, the neighbouring Government lands. The Coffee Board can work out model schemes on actual

investigations in a typical area in each State and advise the States on planning the programme on a large scale during the Fifth Plan period. The Board may also arrange for the plantation of new areas through the small holders as a new Plan scheme with appropriate phasing.

(Paragraphs 9.10, 9.11,
9.12 and 9.13)

28. The suitability of land for either of the varieties of coffee vis-a-vis fruits in horticultural farms and in marginal areas should be studied and suitable area programmes of diversification prepared by the Coffee Board utilising the Diversification Fund available with it.

(Paragraph 9.15)

29. The main thrust of production strategy in the case of coffee should be the maximisation of the yield level through appropriate replantation and intensive cultivation programmes.

(Paragraph 9.16)

30. The extent of the area which can be brought under irrigation at reasonable cost, the total investment required and the share which the State Governments should meet as subsidy for small growers should be assessed by a collaborative study undertaken by the Coffee Board, UPASI and other associations and the concerned State Governments.

(Paragraph 9.17)

31. In order to meet the problems arising out of fluctuating yields of coffee in alternate years, a suitable buffer stock should be created.

(Paragraph 9.18)

32. High costs are partly the result of the high incidence of taxes and duties levied on coffee. Revenue considerations should be of secondary importance in the context of the need for pushing up the production levels of coffee so as to meet the increasing requirements of internal consumption and an active policy for export promotion.

(Paragraph 9.20)

33. As the Pool Fund maintained by the Coffee Board cannot be utilised for promotional efforts and as the possibility of increasing the excise and custom duties which feed the General

Fund is limited, adequate funds will have to be placed at the disposal of the Coffee Board by the Government for undertaking promotional activities.

(Paragraph 9.23)

34. Properly run coffee plantations should be able to get the necessary working capital loans from banks. The development funds of the Coffee Board should not be allowed to be locked up in this way.

(Paragraph 9.24)

35. The assistance of other institutional agencies like the Agro-industries Corporations may also be sought for equipment hiring and other facilities. In the transition period during which the above mentioned links with the institutional agencies are established, an appropriate amount may be earmarked by the Coffee Board to help the plantations.

(Paragraph 9.25)

TOBACCO

36. The long-term export potential for different varieties and grades of Indian tobacco should be assessed on the basis of a study of the demand trends in the different world markets.

(Paragraph 13.1)

37. The strategy for increasing production of tobacco should cover identification of areas having good potential for irrigated virginia tobacco. It is reasonable to expect that, very soon, the heavy black cotton soils of Andhra Pradesh will be changed over to cotton from tobacco wherever possible. Hence the need arises for finding readily alternative tobacco areas in the light soil regions. The targets envisaged for light soil tobacco in the draft Fifth Plan proposals should, therefore, be increased as otherwise there is danger of the old tobacco areas going out of cultivation and the production not having been made up by cultivating new areas.

(Paragraph 13.5)

38. Production of low nicotine VFC tobacco which is used as neutral filler and which has certain specific qualities should be accelerated in order to enable the entry into the Germany (FR) market.

(Paragraph 13.7)

39. In view of the demand for oriental tobacco in the East European markets, the feasibility of growing it on an adequate scale should be explored.

(Paragraph 13.9)

40. New varieties of tobacco evolved by the research institutes should be released for commercial cultivation only after they have passed the manufacturing tests by the cigarette industry. Introduction of these varieties should then receive due consideration on the part of the extension agencies.

(Paragraph 13.10)

41. With the general consumption trend towards the low nicotine content of virginia, the tobacco grown on light soil areas with irrigation, which has low nicotine content, should find favour from the marketing point of view. The proposed Tobacco Board should, therefore, lay down a policy for growing of irrigated tobacco in the light soil areas.

(Paragraph 13.14)

42. The high cost of assembling and marketing of the export varieties of tobacco, which is standing in the way of export, should be reduced.

(Paragraph 13.15)

43. It is essential to safeguard the interests of tobacco producers by making an inroad into the world trade in filler tobacco, especially when India has got good varieties which could find a place in the world markets provided they are offered at competitive prices. It would be desirable to have a second string of export in the public sector which could cut across the monopoly of foreign concerns. The proposed Tobacco Board could be entrusted, *inter alia*, with the task of studying the preferences of the traditional buyers for tobacco with low nicotine content grown in light soil areas and taking steps necessary for improving the export prospects of filler tobacco.

(Paragraph 13.17)

44. The Ministry of Commerce should examine the factors responsible for comparatively lower prices of Indian varieties, vis-a-vis tobacco of U.S. origin in the Singapore market.

(Paragraph 13.18)

45. There is need for rationalising the cost structure of tobacco cultivation with a view to encouraging the exports of inferior and filler tobaccos, for which there is an international demand as also for further promoting exports of VFC tobacco.

(Paragraph 13.19)

PEPPER

46. There is need for studying the impact of the programme for production and distribution of rooted cuttings of pepper. It would be useful to examine if any propaganda or support is needed for furthering the distribution of cuttings by the cultivators themselves from their own vines.

(Paragraph 17.2)

47. The programme for popularisation of Panniyur-I hybrid which is not only high yielding but is also suitable for export from the quality angle, should be given high priority.

(Paragraph 17.4)

48. The Indian Council of Agricultural Research (I.C.A.R.) has recently sanctioned a Coordinated Research Project for spices. This could go a long way in testing and evolving high yielding varieties of pepper should be selected for field trials in con-foreign hybrids of pepper should be selected for field trials in consultation with the Ministry of Commerce. In this process, apart from the yield rate and cost of cultivation, their quality acceptability in export market should also be kept in view.

(Paragraph 17.5)

49. A suitable plan of action for eradication of wilt disease which is reported to be under consideration in the Ministry of Agriculture should be expeditiously taken up in consultation with the concerned States.

(Paragraph 17.6)

50. Pepper can be grown mixed with other plantation crops like coffee, coconut, arecanut, etc. It is reported that Coffee Board has already issued instructions for encouraging coffee growers to grow pepper under shade trees. Propaganda for cultivating pepper as a mixed crop with arecanut, coconut, etc. is also being done by the Directorate of Arecanut and Spices Development. These activities should be intensified.

(Paragraph 17.8)

51. The problems of pepper cultivation in Cannanore and Kozhikode districts of Kerala which account for almost 50 per cent of the total area under pepper in the country should be studied by the Ministry of Agriculture.

(Paragraph 17.9)

52. Replantation with some new high yielding varieties could give a boost to the pepper production in Kerala. Such a programme should be preceded by a survey of the present status of plantations. This programme should be supported by proper extension and credit facilities to cover the cost of replantation and to ensure the application of recommended inputs and improved practices.

(Paragraph 17.10)

53. If exports of pepper are to be increased, much more detailed information should be available about the qualities popular in the importing markets and the ruling prices as also the sources of supply so that the competition can be planned accordingly. The Ministry of Commerce should ensure that Indian Embassies and High Commissions evolve a better system of reporting of prices of commodities and sources of supply in the countries where Indian pepper can find a ready or a competing market.

(Paragraph 17.13)

5.4 It would be necessary to give due weight to foreign specifications in the Indian grading system so that production of pepper of lower pungency is encouraged in the country. The two main considerations should be yield and quality acceptability for the bulk of the export market.

(Paragraph 17.14)

55. In view of the demand from certain countries for processed products, the economics and possibility of exporting them should be examined.

(Paragraph 17.15)

CARDAMOM

56. For a meaningful programme of development, the Cardamom Board should undertake a survey of the cardamom plantations so as to assess the area affected with *Katte* disease. The programme for *Katte* disease control should aim at uprooting all the diseased plants.

(Paragraph 21.2)

57. The total life span of a cardamom plant being about 15 years, with a bearing period of 12 years, an annual replantation target of 5,500 hectares is necessary. Therefore, the coverage under the replantation programme should be stepped up substantially.

(Paragraph 21.3)

58. Suitable packages of practices for adoption by the small farmers need to be devised. Adequate incentives in the form of credit and input supplies alongwith extension support would go a long way in augmenting production of cardamom in these holdings.

(Paragraph 21.5)

59. There is need to examine the feasibility of bringing more area under cardamom. The system of growing cardamom as a mixed crop, with arecanut and pepper, in protected valley locations, which have adequate soil moisture, should be adopted.

(Paragraph 21.6)

60. The State Forest Departments should examine the feasibility of growing cardamom as a catch crop in areas under departmental silvicultural schemes. The economics of this programme should be examined by the Cardamom Board in consultation with the State Forest Departments.

(Paragraph 21.7)

61. The Cardamom Board should undertake a fresh study on the cost of production and profitability of cardamom crop with a view to updating the 1968 estimates of the Marketing Research Corporation of India and assessing the extent of further possible economy in the cost of production.

(Paragraph 21.9)

62. There is good scope for increasing exports of cardamom to the Middle East and West European countries and the U.S.A. It is necessary to organise an extensive publicity, including distribution of free samples, in these markets with a view to meeting the growing competition from Guatemala.

(Paragraph 21.10)

63. Efforts should be made to evolve denser varieties of cardamom for export to the Scandinavian countries. For this purpose, it is essential to strengthen the research and extension wing of the Cardamom Board with adequate field and laboratory facilities.

(Paragraph 21.11)

64. The demand for cardamom, for the preparation of cardamom coffee, is likely to decline in the Arab countries. It is, therefore, necessary to undertake a massive publicity programme to popularise new uses of cardamom as flavouring material.

(Paragraph 21.12)

65. There is scope for developing export of cardamom oil from India to several countries specially France. Before entering this new line of export, it is essential to find out the actual specifications of the oil which are in demand in these foreign markets. A start could be made only after ensuring supply of the required quantities of cardamom oil on a fairly long-term basis at competitive prices.

(Paragraph 21.13)

66. If the economics of manufacturing processed products of cardamom is favourable, the countries to which these products could be exported should be identified.

(Paragraph 21.14)



INTERIM REPORT ON CERTAIN IMPORTANT ASPECTS OF SELECTED EXPORT ORIENTED AGRICULTURAL COMMODITIES

PART I

INTRODUCTION

1.1 Agricultural commodities play a pivotal role in India's export trade. The rate of expansion of overall exports is envisaged at 7.6 per cent per annum under the Fifth and Sixth Five Year Plans which is about the same as actually realised in the Fourth Plan period. Agricultural commodities have to make a significant contribution if this rate is to be maintained. With the adoption of scientific techniques in agriculture and the widespread use of high yielding varieties, there is a vast potential for rapid growth in the agricultural sector. It is necessary to plan the production of different commodities in such a manner that the surpluses which are likely to be available after meeting internal demand could find a ready market in the foreign countries. Study of the scope for expansion of agricultural production to meet the requirements of exports is one of the important terms of reference entrusted to the National Commission on Agriculture.

1.2 From the long list of export oriented agricultural commodities the Commission has, for the purpose of this Interim Report, identified only five commodities, namely, tea, coffee tobacco, pepper and cardamom, which require immediate attention. These five commodities together account for nearly 40 per cent of the total exports of agricultural commodities of the country, as will be seen from the table below :

**TABLE 1.1—Exports of selected agricultural commodities during
1970-71 to 1972-73***

						(Rs. lakhs)		
Commodities						1970-71	1971-72	1972-73
(i)	Tea	..	..	..	..	14,825	15,631	14,729
(ii)	Coffee	..	..	..	..	2,511	2,207	3,293
(iii)	Tobacco	..	..	..	..	3,140	4,225	6,107

TABLE 1.1—*contd.*

Commodities						1970-71	1971-72	1972-73
(iv)	Pepper	..	..	..	..	1,525	1,483	1,431
(v)	Cardamom	..	..	..	..	1,134	820	695
(vi)	Sub-total (i) to (v)	..	..	..	..	23,135	24,366	26,255
(vii)	All agricultural commodities	..	..	..	..	56,510	61,022	74,223
(viii)	TOTAL EXPORTS FROM INDIA	..	..	..	..	152,439	160,315	195,445
(ix)	Item (vi) as percentage of item (vii)	..	..	..	..	40.94	39.93	35.37
(x)	Item (vi) as percentage of item (viii)	..	..	..	..	15.18	15.20	13.43
(xi)	Item (vii) as percentage of item (viii)	..	..	..	..	37.07	38.06	37.98

The Commission has attempted to make a broad assessment of the export possibilities of these commodities in the light of the likely trends in production and internal demand over a period of time. An endeavour has been made to identify some of the countries where a high level of demand could emerge for these commodities. Various measures to facilitate exports or to mitigate the influence of factors inhibiting the export drive in respect of these commodities have also been discussed in the context of forecasts of future demand. The Commission is aware that there are some important problems of research and training facing these crops. A few of these have been touched upon in this Report. These and other problems will be dealt with in detail in the Final Report of the Commission.

1.3 In this task, the Commission has been greatly assisted by the deliberations in its Working Group on Export Oriented Agricultural Commodities which examined important aspects of production, consumption and exports of selected agricultural commodities in some depth. The composition of the Working Group is given at Appendix I. In addition, the Commission had a series of inter-departmental meetings with the officials of the Ministries of Agriculture and Commerce, Indian Council of Agricultural

*Source—Monthly Statistics of Foreign Trade, Vol I, published by the Department of Commercial Intelligence & Statistics, Calcutta.

Research and Indian Institute of Foreign Trade. Further, Members of the Commission held discussions with the Tea Board, Coffee Board, United Planters' Association of Southern India and various producer interests to review important aspects concerning tea and coffee. In regard to the three other commodities, namely, tobacco, pepper and cardamom, the Commission was assisted by the briefs and statistical information furnished by the respective Directorates of Commodity Development and Export Promotion Councils.

1.4 The Commission has set up a Working Group on Demand and Supply Projections of Agricultural Commodities. A Technical Group on Demand Projections constituted by this Working Group has indicated estimates of demand for different time perspectives of various agricultural commodities including coffee, tea and tobacco. These have also been taken into consideration by the Commission in making an assessment of the future demand for coffee, tea and tobacco covered in this Interim Report.

1.5 In regard to tobacco and pepper, the questions of quality and cost of production were examined by eliciting information from the Indian High Commissions/Embassies in different countries. For this purpose Questionnaires were sent to these Commissions and Embassies through the Ministry of Commerce. Replies received in response to these Questionnaires have been utilised in formulating views on these aspects.

सत्यमेव जयते

PART II
TEA
SECTION I
EXPORTS

Trend of exports

2.1 Exports of tea have varied between 174 million kg (1969-70) to 221 million kg (1962-63) in terms of quantity and between Rs. 114.8 crores (1965-66) to Rs. 180.2 crores (1967-68) in terms of value during the period 1960-61 to 1972-73, as will be seen from the following table:

TABLE 2.1—Exports of tea from India—1960-61 to 1972-73*

Year						Quantity (million kg)	Value @ (Rs. crore)
1960-61	..	..	..	..	..	196	123.6
1961-62	..	..	..	..	..	205	122.3
1962-63	..	..	..	..	..	221	128.8
1963-64	..	..	..	..	..	209	123.4
1964-65	..	..	..	..	..	212	124.7
1965-66	..	..	..	..	..	197	114.8
1966-67	..	..	..	..	..	190	158.4
1967-68	..	..	..	..	..	203	180.2
1968-69	..	..	..	..	..	201	156.5
1969-70	..	..	..	..	..	174	124.5
1970-71	..	..	..	..	..	199	148.2
1971-72	..	..	..	..	..	209	156.3
1972-73	..	..	..	..	..	193	147.3

It is significant to note that after having touched the high point of 221 million kg in 1962-63 exports were of a lower order during the following decade, 1963-64 to 1972-73. This set-back can be ascribed to low off-take of tea by the traditional buyers of Indian teas.

*Source—Monthly Statistics of Foreign Trade-op. cit.

@Figures for the year upto 1965-66 are not strictly comparable with those for the later years due to devaluation of the Rupee in June, 1966.

2.4 It will be seen from the above table that India's share in the principal market of United Kingdom has declined from 47 per cent in 1967 to 31 per cent in 1972. In the case of USSR, India has accounted for, on an average, 91 per cent of the total imports and supplied almost her full requirements in 1971. Though USSR's production has increased considerably, her per capita consumption is also rising steadily and it is hoped that she will continue to import increasing quantities from India specially because Sri Lanka is not a competitor in this market.

2.5 It would also be seen from Appendix II that India has been meeting between 14 to 20 per cent of the requirements of leading importing countries, like Netherlands, Australia, Canada and Iraq. Besides these major markets, there are some other countries (like Morocco, Japan and Chile) whose imports of tea are sizeable in quantity though tea from India does not figure prominently in their trade.

2.6 The pattern of exports of tea from India suggests that there is need for making a continuing country-wise assessment of export possibilities of tea from India, not only to traditional buyers but also to the new markets.

Long term outlook

2.7 Assessment of export potential or export availability of Indian tea has been made by several organisations like the Food and Agriculture Organisation of United Nations (FAO), the Tea Board and the Marketing Research Corporation of India (MRCI). These are presented in the following table :

TABLE 2.3—Estimates of export potential/availability of tea from India.

Organisation	(Million kg)		
	1975	1980	1985
Tea Board	242	277	305
Marketing Research Corporation of India (MRCI) .. .. .	..	227	..
F.A.O. (export availability) .. .. .	..	206	..

It will be seen that the estimates of export availability worked out by the F.A.O. for 1980 are the lowest. According to the FAO's

2.2 Appendix II gives the total imports of tea by 24 leading importing countries of the world and the corresponding exports* from India during the calendar years 1966 to 1972. It would be observed that, on an average, exports of tea from India amounted to about 28 per cent of total world imports during these years. During the individual years in this period, this share ranged from 24 per cent (1969) to 31 per cent (1967).

2.3 Though India exports tea to a large number of countries, the off-take of only a few countries has been of a significant order in the above mentioned period. Annual average exports to the United Kingdom (UK) amounted to 84 million kg, to the Union of Soviet Socialist Republics (USSR) 28 million kg, to The United Arab Republic (UAR) 13 million kg, and to Sudan and Afghanistan 10 million kg each. The United States of America (USA) though second most important importer of tea in the world, lifted only, on an average, 8 million kg from India during this period. The following table gives an idea of the percentage share of tea from India in the total imports made by the leading buyers during the calendar years 1966 to 1972:

TABLE 2.2—*Percentage share of tea of Indian origin in the imports made by selected countries—1966 to 1972*

Year	U.K.	USSR	UAR	Sudan	Afgh- nistan	USA	World
1966 ..	37	80	66	53	61	12	28
1967 ..	47	87	51	80	67	13	31
1968 ..	38	99	62	79	80	12	29
1969 ..	28	89	57	74	88	12	24
1970 ..	38	96	39	61	83	11	27
1971 ..	28	100	79	91	94	12	27
1972 ..	31	86	96	80	61	10	29
Average ..	36	91	59	74	78	12	28
Average annual exports from India (m. kg.) ..	84	28	13	10	10	8	197

*Comparable data on countrywise imports from India are not readily available. Data on exports from India are published by the Department of Commercial Intelligence and Statistics, on a financial year basis. However, with a view to arriving at some estimates of the share of India in the total imports of tea made by the different countries, data on exports from India for the above period have been compiled on a calendar year basis in the Commission from the Monthly Statistics of Foreign Trade published by the Department of Commercial Intelligence and Statistics.

study on Agricultural Commodity Projections (1970—1980), there will be little change in the existing level of export from India because the growth in production of tea in the country would be largely accounted for by the growth in consumption. Evidently, these projections are based on a gross under-estimation of the country's production potential of tea. The Tea Board's projections of exports at 277 million kg in 1980 and 305 million kg in 1985 also are not an objective assessment of the export potential. They only represent the difference between the assumed levels of production worked out on a modest growth rate of 3 per cent per annum and the levels of internal consumption growing at a much faster pace. The projection of export for 1980 at 227 million kg worked out by the Marketing Research Corporation of India lies in between the estimates of the FAO and the Tea Board.

2.8 For the Fifth Five Year Plan, the Ministry of Commerce is contemplating an export target of 256 million kg of tea. There are good prospects of expansion of export of tea in the long run provided a bold export promotion programme backed by higher level of production is taken up. It would also be apparent from the foregoing analysis that it is not correct to estimate the export demand in future on the basis of trends in actual exports observed in any particular block of years. Export possibilities have to be assessed after taking due consideration of the potential demand both in traditional and non-traditional markets.

सत्यमेव जयते

SECTION II

INTERNAL CONSUMPTION

3.1 Because of the absence of a long term development policy for tea production, there is an attempt to curb the annual rise in the internal consumption by fiscal measures. There is a strange marriage of convenience between the production policy on the one hand and internal consumption policy on the other. As a matter of fact, annual exercises of fixing the export targets of tea have merely been in the nature of compromise between the level of production likely to be reached and the minimum level at which the internal consumption could be pegged to leave a margin for export. The consumption of tea in India rose from 83 million kg in 1953-54 to 127 million kg in 1960-61, 166 million kg in 1965-66 and 213 million kg in 1970-71. Consumption of tea is provisionally estimated at 231 million kg in 1972-73. There has been an overall increase of 82 per cent during the period 1960-61 to 1972-73. The order of annual increase has been about 5 per cent during this period.

3.2 According to the FAO, total consumption of tea during 1970—80 would rise in the developing countries at an average annual rate of 4.2 per cent as against 4.5 per cent during 1965—70. This rate of increase in consumption would largely be accounted for by the high rate of growth in India where rural incomes are rising and the tea-drinking habit is spreading to new classes.

3.3 Besides the FAO, a number of other organisations such as the Tea Board, the MRCI and the United Planters' Association of Southern India (UPASI), have also worked out projections of demand for tea over the next one or two decades. In view of the basic importance of correct estimation of demand, the Commission constituted a Working Group to, inter alia, project the consumer demand for selected agricultural commodities including tea over the next three decades, keeping in view the likely trends in the growth of income, income elasticity of demand and growth of population. The income elasticity of demand for tea is quite high, being 1.18 in rural areas and 1.06 in urban areas based on the National Sample Survey (NSS) Studies. It has been estimated that the demand for tea would be 378 million kg in 1980-81 and

532 million kg in 1985. If this trend continues, the demand in 2000 A.D. will be of the order of 1508 million kg. The following table compares the demand projections made by the Commission with those of other organisations:

TABLE 3.1—*Projections of demand for tea in India.*

(Million kg)								
Year			Tea Board	FAO	MRCI	UPASI	National Commission on Agriculture	
1975	..	..	254	..	294	274	275	
1980	..	..	309	345	400	351	378	
1985	..	..	375	..	..	..	532	
2000 A.D.	..	..	..	..	..	..	1,508	

3.4 The Commission has reasons to believe that the projections of internal demand have been kept at a low level to make them consistent with the basic export policy. The export drive is vitiated by the basic approach of trying to adjust exports to production and curtailing internal consumption by fiscal measures. In this process, the broader perspective of increasing production to meet the natural rise in demand within the country as also the export potential has been lost sight of.

3.5 As there is no satisfactory internal promotion for tea, the demand for other soft drinks is expanding even to rural areas. It will, however, be recognised that tea is a labour intensive industry and the rate of employment per unit of cultivated land is 5 to 7 times that in other field crops in India. Apart from employment potential, another factor to be taken into account is the profitability of the tea industry. According to the Reserve Bank of India, the net profit of the tea companies generally varies between 8 to 9 per cent of the net worth, as is seen in the following table:

TABLE 3.2—*Percentage of net profit to net worth of tea Companies***

Year	Percentage							
1951	8.6
1955	8.8
1960	9.2
1965	8.2
1970	8.6

**Source—Long Term Development Programme for Tea, June 1973, UPASI.

Further, the share of income from tea in the total revenue derived by the States where tea is grown as a major crop is quite substantial. In Tamil Nadu, for instance, Rs. 79 lakhs were collected from tea plantations as agricultural income tax as against States' total collection of Rs. 197 lakhs in 1969-70. In Kerala, tea plantations contributed Rs. 176 lakhs as general sales tax and surcharge and Rs. 58 lakhs as agricultural income tax in 1966-67. Thus taking into consideration the employment potential and profitability aspects of the tea industry, the Commission feels that all concerted efforts should be made to increase production of tea to the extent feasible rather than to check the growth of demand by fiscal measures and to stabilise exports at a particular level.

3.6 As an enjoyment beverage, tea is an established favourite in many western countries and is becoming so in many other countries. The largest increase in demand in the next 20 years may be in the non-producing developing countries, the more populous producing countries and in new consuming countries like those in Eastern Europe and Middle East. In the Western countries, as in the case of most others, a variety of substitute beverages is available and domestic producers have advantages in promoting their consumption which tea may not have. If tea is to hold its position and expand its total base, greater quantity of tea should be consumed rather than tea at a higher price.

3.7 The demand pattern, as it emerges from the above analysis, highlights the need for an aggressive production programme for tea. It is necessary to carefully assess the scope for augmenting production by increasing the yield of the existing plantations through improvement of cultural practices and extending the area under tea.

SECTION III

PRODUCTION

4.1 Between 1950 and 1972, production of tea has shown an increase of 61.6 per cent whereas area has gone up only by about 13.5 per cent. The increase in yield has been of the order of 42.5 per cent. During the period 1960-72, production has increased at the rate of 2.4 per cent (compound) per annum, contribution of area being 0.7 per cent and that of yield 1.6 per cent. The following table gives estimates of area, production and yield at different points of time :

TABLE 4.1—Area, production and yield of tea in India*

Year				Area (’000 hectares)	Production (million kg)	Yield (kg per hectare)
1950	..	..	..	315.7	278.2	881
1955	..	..	..	320.2	307.7	961
1960	..	..	..	330.7	321.1	971
1965	..	..	..	341.8	366.4	1,072
1970	..	..	..	354.1	418.5	1,182
1971	..	..	..	356.5	433.3	1,215
1972**	..	..	..	358.4	449.5	1,255

4.2 Tea is grown in north and north-eastern States of Assam, Bihar, Tripura, Uttar Pradesh, West Bengal, Punjab and Himachal Pradesh and in the southern States of Kerala, Karnataka and Tamil Nadu. The States of Assam, Kerala and Tamil Nadu contribute about 98 per cent of all-India production of tea. There are certain differences in tea cultivation in the two regions. Tea is more prominent in the north-east and only about 20 per cent of total area under the crop is in the south. However, owing to certain environmental and climatic factors, productivity is somewhat higher in the south which accounts for about a quarter of the total output as well as exports. The average size of a garden is relatively smaller in the south and of the 12,999 estates registered with the

*Source—Tea Statistics, 1971-72, Tea Board (October, 1972). Estimates for 1972 have been taken from the Digest of Tea Statistics, 1972-73, Tea Board.

**Provisional.

tea Board (as on 31st March, 1972), 10470 are in the three southern States of Tamil Nadu, Kerala and Karnataka. Another important difference is that in the south, plucking of tea leaves is carried on throughout the year, while in the north, it is seasonal.

4.3 Yields of tea vary from State to State and region to region. This is evident from the following table which gives the relevant data at decennial intervals :

TABLE 4.2—Yields of tea in India according to states/regions*

State/Region	Actual Yield			Percentage increase		
	1950 (kg hectare)	1960	1970	1950—60	1960—70	1950—70
NORTH EAST INDIA						
Assam	948	970	1,178	2.32	21.44	24.26
West Bengal ..	1,024	985	1,150	(—)3.81	16.75	12.30
Punjab, U.P., H.P., Bihar, and Tripura .. }	367	363	340	(—)1.09	(—)6.34	(—)7.36
Average for North- East India ..	941	947	1,133	0.64	19.64	20.40
SOUTH INDIA						
Kerala	672	965	1,139	43.60	18.03	69.49
Tamil Nadu ..	685	1,152	1,606	81.42	39.41	152.91
Karnataka ..	412	948	1,526	130.10	60.97	270.39
Average for South India ..	647	1,047	1,367	61.82	30.56	111.28
AVERAGE FOR INDIA	881	971	1,182	10.47	21.86	34.62

it will be seen that in 1970 while yields of tea in Tamil Nadu were as high as 1606 kg per hectare, in Punjab, Uttar Pradesh, Himachal Pradesh, Bihar and Tripura they were as low as 340 kg. As against this, yield level in Assam and West Bengal was 1,178 and 1,150 kg respectively. The increase in the yields in north

*Source—Long term Development Programme for tea Jan 1973, UPASI.

and north-eastern India has been relatively small as compared to significant progress achieved in south India over the past two decades. Another disturbing factor is that yield levels in Darjeeling area which is known for its quality tea, are very much lower compared to the levels obtaining in other north and north-eastern tea growing areas. The yield in this area was as low as 557 kg per hectare in 1971.



SECTION IV

APPROACH

5.1 The entire approach to the tea industry has to be reoriented. It is necessary to start with a detailed assessment of the production potential with a focus on the extent of new areas which can be brought under tea mainly in the shape of small holdings. Along with this, there is need for objectively assessing the level of demand which could be reached in different time perspectives, say, 1980-81 and 1985-86. Also, export policy for this commodity has to be formulated on the basis of a detailed study of the possible trends in demand in various traditional as well as non-traditional markets. This study should explore the possibilities for exporting new tea derivatives especially instant tea. Various aspects of the new approach to the tea industry are discussed in the following paragraphs.

Classification of tea plantations

5.2 For a meaningful programme of development, it is necessary to work in terms of estimated yield at the plantation level. In other words, State level yields are not quite significant for planning long-term development of tea. It will be agreed that even in States which have the highest yield, there might be some badly managed plantations with poor yields. Similarly, in States with low average yields the possibilities of existence of some good plantations with high yields are not remote. Evidently, no programme for development of tea industry can be evolved on the basis of State averages of yield. The Commission, therefore, feels that what is really required is the classification of tea plantations according to their yields so that specific programmes related to the requirements of each type of plantation could be formulated. Thus, the first step for planned development of tea industry is to collect the basic data in respect of the present status of the tea industry in the country. This task could be best done by the tea Associations like UPASI, Assam Tea Planters' Association, etc. in collaboration with the concerned State Governments. On the basis of data thus collected the existing plantations may be classified into three categories, namely 'good', 'medium' and 'others'. The specific measures to be taken in terms of extension and improvement will have to be geared to the requirements of each of these types of plantations.

Extension of area

5.3 The question of availability of area for expanding tea cultivation has been considered at some length by the Commission during its discussions with the Tea Board. Though no comprehensive survey has so far been undertaken by the Tea Board, it is understood that nearly 150,000 hectares of surplus land in the tea grants are available mostly in Assam and to some extent in West Bengal, as also over 70,000 hectares in the south. There is every possibility that these areas might be lost to tea due to the present policy of acquiring surplus land for distribution among the landless agricultural labourers. Further, some areas in Manipur and Tripura also offer scope for tea cultivation. In Jammu and Kashmir as well, there is possibility of growing second grade tea which could be blended with superior tea for local consumption. The Commission would recommend that the scope for extension of area under tea in eastern States, Jammu & Kashmir as also in the south, should be explored.

Improved cultural practices

5.4 Apart from extension of area under tea, there is great scope for undertaking measures for—

- (a) replanting, replacement and rejuvenation; and
- (b) improved cultural practices such as pest control, manuring and irrigation.

The Commission considers that an energetic plan of extension education in improved cultural practices supported by well organised input supplies system would go a long way towards augmenting the existing yields of tea. The most important factor is to establish the correct pruning cycle in the tea estates. A four year pruning cycle has been adopted satisfactorily in many well established tea estates in India. The per hectare yield during the first year of the cycle is quite negligible; this, however, increases from the second to the third year. Sometimes the maximum pruning can be in the fourth year also. By adopting 'Sciffing' during the fifth year, the planters could extend the pruning cycle to another year without detriment to the yield of tea. From the experiments conducted by one tea estate of south India, it has been proved that the field sciffed during the fourth or fifth year of the cycle, followed by application of 10 lbs of zinc sulphate and 10 lbs of urea, adopting 0.5 to 1.0 per cent concentration, sprayed

twice during the non-rainy season, has given 10 to 25 per cent higher yield especially during the off season. There are some areas in Nilgiris, Kangra and Kottayam districts where, through liberal application of fertilisers, increase of 20 per cent in the yield rates of member growers of cooperative societies has been obtained during the last 8 to 10 years.

5.5 Replanting is also an important measure but cannot be adopted as a universal remedy for low yields. The utility of this measure has yet to be established on the basis of scientific studies. The UPASI Scientific Department is of the view that rejuvenation pruning is the correct remedy for 40 per cent of the total area under the crop. Both in terms of crop loss and replanting costs, rejuvenation techniques are considered to be more economical. Areas capable of responding to such treatment should be demarcated in different States. The Commission recommends that suitable programme of rejuvenation pruning of tea plants should be taken up on a priority basis.

5.6 Another method recommended for raising the yield of tea from existing plantations is the 'crown-pruning'. It appears that the southern tea planters have a satisfactory experience of adopting this method, to revive the plant completely. This system may, however, not work well in Assam and some other northern areas because unlike in the south, Assam tea does not have very deep roots. A feasibility study should be undertaken to identify the areas suitable for adoption of crown pruning in the northern States.

5.7 Where large gaps exist in the tea plantations, 'infilling' with new high yielding clones could be a cheap and convenient method of replantation. Clones of suitable high yielding and early maturing varieties of tea can be used for filling these gaps. Such bushes may start yielding from the third year onwards. Once the new bushes start yielding, an equal number of old bushes can be cut and replaced by new material. It is possible, by using this method continuously over a period of ten years or so, to get substantial area replanted without any loss of income.

'Good' plantations

5.8 'Good' plantations with efficient management and high yields may be allowed to expand the area in the normal way. The implications of this extension in terms of land ceilings will have to be gone into. The Commission feels that wherever suitable areas

in the vicinity of existing 'good' plantations are available, it is in the interest of the economy to extend the plantations to cover such areas. Such a measure will have an added advantage that these plantations may be able to reclaim the surplus land available with them for tea growth without any assistance from the Government. Where the management is not prepared to make investment on plantations in the additional areas, the question of making available resources to such plantations either in the form of Government loans or through the nationalised banks could be considered. Efforts should be made to complete expansion through 'good' plantations during the Fifth Plan period.

'Medium' plantations

5.9 'Medium' plantations could be allowed to expand depending upon how close they are to the 'good' plantations in the matter of management practices. Normally the 'medium' plantations should reach the level of good management before they are allowed to expand. Wherever feasible, additional capital and technical assistance necessary to improve their yields should be provided.

'Other' plantations

5.10 In the case of 'other' plantations the approach should be one of looking into the possibility of the small holders getting together on a cooperative basis to attain a viable size which would make it possible to channel the necessary inputs and technology to improve their output and performance. The experience of Tea Development Authority in Kenya could be quite useful in this regard. This Authority is reported to have acquired forest land, cleared it and made allotments of one hectare plots to small growers for tea cultivation. The Tea Development Authority provides the infrastructure for the supply of inputs, marketing, etc., and also arranges adequate credit in the initial years of plantations when there are no returns. The Commission feels that a scheme on similar lines could profitably be developed for adoption under Indian conditions. There can be an organisation in the cooperative sector to manage small holdings in new areas. The main problem in respect of these plantations would be to create practical and experienced management cadre to run the scheme. In this connection it is worth noting that for Pithoragarh district in Uttar Pradesh, which has a terraced slope in altitude from 2000 to 6000 metres, a scheme for growing tea in small holdings has already been sponsored and the task of selecting suitable clones

for this area is in hand. The experience gained in the implementation of this scheme should be utilised in the programme for small plantations in additional areas in Assam.

Small plantations

5.11 Holdings upto 5 hectares in size, which might be considered as small holdings in the tea industry are about 8800 (as on 31st March, 1971) in India. Of these, 6014 holdings are located in Tamil Nadu and 2786 in Kerala. These holdings are mainly located in Nilgiris district of Tamil Nadu and Kottayam district of Kerala, but they are scattered. The productivity of tea in these small holdings is very low, and they have no properly organised input service. Further, the cooperative leaf curing societies are not located near the small plantations. A survey conducted by the UPASI in a few selected centres of Nilgiris district has shown that since the small growers are not organised, they have no deliberative machinery to deal with across the community problems. The small tea planters need financial assistance as well as adequate input services like fertilisers, pesticides, etc., in time. Transportation is another problem in the small plantations. It is essential that the State Government should render considerable assistance in this direction to the small plantations. It is quite possible to launch a two-pronged attack to promote productivity and reduction of costs through formation of cooperatives of small growers and adoption of newer and appropriate technology.

Role of co-operatives

5.12 In the Indian tea industry, cooperatives are of a recent origin. After the recommendations of the Plantations Enquiry Committee (1956), the concept of cooperativisation has been adopted in the tea industry only in the sixties. Following the recommendations of this Committee, there has been some progress in the formation of cooperatives among the small tea growers. Twelve cooperative tea factories have been set up in Nilgiris, Kottayam and Silchar. Since most of the small growers are concentrated in Nilgiris, this area alone has eight cooperative factories. With a view to coordinating activities of these eight factories, a Central Service Society was established at Coonoor in May, 1965. These cooperatives have hitherto mainly confined their activities to the manufacturing aspects, and, in consequence, not

much attention has been given to production and development of tea. The Commission recommends that these cooperatives should be encouraged to enlarge their activities to cover production and development aspects of tea as well.

Specific areas

5.13 There is no difference of opinion that Darjeeling tea is rated very high in the foreign markets. The tea estates in this area are, however, not well managed and are suffering from continuously low yields caused, among others, by heavy pluckings and soil erosion. Because of the tendency for heavy pluckings to reap quick profits, the plough back investment is declining fast. The Commission suggests that a special consultancy service should be engaged to study the soil and other conditions and make recommendations for remedial measures. Such steps as 'infilling', stone terracing, etc. should bring results. There is also a case for preferential rate of subsidy for this area.

Sick plantations

5.14 Sick plantations could be defined as those where the management is not competent and whose operations are not economical because of mounting pressure of costs. The Task Force on Tea Industry recently constituted by the Ministry of Commerce has defined a sick tea garden as one which has incurred a loss in three out of five preceding years, has yield which is 25% or less than the average yield in a district for these years and where the garden concerned has been habitually defaulting in its statutory obligations. Such plantations in potentially good tea areas require to be rehabilitated. The remedy, however, does not lie in protecting the level of employment in such units by a process of over-investment. Only those units should be taken up where the cost of rehabilitation can be recovered from the unit itself in course of time. In other words, the process of rehabilitation of sick units has to be self-supporting.

5.15 A suggestion has been made that a Standing Review Body should be set up to initiate various measures for rehabilitation, to pursue corrective action for operating such units on better lines and to examine whether the order of investment needed for rehabilitation of a sick units could be recovered ultimately from the respective units. The Reserve Bank of India in its Report on

Finance for Tea Industry (February, 1972) had endorsed a suggestion for the setting up of a Tea Development Foundation for investigating the questions of rehabilitation and betterment of the relatively weaker units of the tea industry.

5.16 The Commission has considered this problem in depth and feels that there are only two alternatives for rehabilitating the sick units. These are:

- (i) either the existing management could develop a rehabilitation programme so as to render these plantations into self-sustaining units. Such a plan might be developed in technical collaboration with the tea planters' association; or
- (ii) the Government could take over the management of these plantations.

Suitable legislation for taking over sick plantations needs to be expedited to rehabilitate them and make them economically viable.

5.17 In addition to the measures specific to certain sections of the tea industry, e.g., small plantations, sick plantations and area expansion programmes, the Commission attaches great importance to the question of financial assistance to the tea industry for its proper development. To bring about a reorientation in the approach of the tea industry, financial assistance should be tied to the actual performance of the management of each plantation and should not be extended on the basis of State/regional yield averages.

Financial assistance

5.18 The Tea Board operates the following important schemes for financial assistance to tea planters:

- (i) tea plantation finance scheme, and
- (ii) tea replantation subsidy scheme.

The tea plantation finance scheme is in operation since 1961-62 and provides loan assistance to planters for new/extension planting. It has been reported that the planters are generally not inclined to avail of this scheme due to factors like alleged low profitability of the industry, fear of nationalisation, insecurity of tenancy, etc. Because of these factors plantings have proceeded

at the rate of 0.5 to 0.8 per cent annually in the last two decades as against the target of one per cent. The Commission feels that the broad objective of the scheme should be to build up self generating units. Further, if the big planters with good management are convinced about the future policies of the Government in regard to land utilization, tenancy, etc., they would themselves be forthcoming to undertake the plantations with their own investment. Some assistance to cover the cost of reclamation, etc. and permission to use land for tea plantation would be sufficient for them. Even if some of the 'good' planters are not willing to make investments, the banks and other institutions like Agricultural Refinance Corporation (ARC) would be willing to help them. The possibility of providing institutional finance to such plantations particularly the bigger plantations should be explored. Further the following criteria should be adopted in rendering financial assistance to various types of tea plantations :

- (i) programmes for extension of 'good' plantations should be financed on the basis of calculations relating to cost of extension vis-a-vis returns on the yields expected. The input-output economics of new clones should be studied;
- (ii) in case of 'medium' plantations, programmes of infilling should be assisted if they are expected to result in improvements in yields and thus become self-paying in the long run;
- (iii) subsidy on small plantations should be extended if it is considered that this investment would make them viable economic units; and
- (iv) preferential rates of subsidy for undertaking measures of land development, soil conservation, etc. should be extended in certain problem areas, e.g., Darjeeling and some plantations in south India.

5.19 Replantation subsidy scheme was introduced in October, 1968. The rate of replanting, however, has been poor, being as low as 0.3 per cent in recent years against the target of 2 per cent. The Barooah Committee had in its Report (1968) recommended a subsidy of Rs. 6,000 per hectare for replantations. It is understood that currently subsidy is being given at the rate of Rs. 4,000 per hectare in the plains and Rs. 5,000 per hectare in the hilly areas. Moreover, replacement has also been brought within the purview of replantation subsidy scheme. Here also it is reported

that the rate of replacement has been going down, particularly in the recent years. During discussions with the Tea Board, the Commission emphasized that the amount of subsidy should be adequate enough to compensate the farmer for the investment which he has to make as well as to provide him a reasonable margin for loss of normal production during the period of replanting. It was also pleaded that there should be special rates of subsidies in case of small tea holders. The Commission feels that it should be possible to achieve greater success through rejuvenation pruning. The cost of replantation could be reduced through 'infilling method'. The scheme should lay greater emphasis on assistance to smaller planters.

Long-term development

5.20 An exercise on long-term development of tea industry has recently been done by the UPASI. According to this exercise, the production of tea could be stepped up from the current level of 450 million kg to 1000 million kg over the next 25 years. For the Fifth Five Year Plan, the Ministry of Commerce has proposed a target of 550 million kg to be achieved by the end of 1978-79. The target of additional production of 550 million kg proposed by the UPASI will consist of (i) 163 million kg from 84,000 hectares of new plantings; (ii) 85 million kg from replanting and replacement planting; (iii) 65 million kg from infilling; (iv) 125 million kg from rejuvenation pruning; and (v) 112 million kg from cultural improvements. This would involve an outlay of Rs. 380 crores on various development programmes (excluding processing and welfare facilities), as is given below:

TABLE 5.1—*Estimates of outlay on long-term development of tea industry*

		(Rs. crores)
Item	Cost	
(i) New plantings	168	
(ii) Replanting and replacement planting	104	
(iii) Rejuvenation pruning	24	
(iv) Infilling	50	
(v) Miscellaneous including field facilities, nursery, new projects, surveys and education programmes	34	
Total ..	380	

This would mean an annual outlay of Rs. 15 crores with some variations for the phasing of the programme over a period of 25 years.

5.21 The Commission recommends that a programme for long-term development of the industry should be initiated by the Ministry of Commerce. In this connection the careful exercise done by UPASI deserves attention. Suitable action should be taken for implementation of the proposals, wherever found feasible.

Tea promotion

5.22 Since tea is not an essential item of consumption, skillful and imaginative promotion is needed to create a growing market for the commodity. From the rapidly declining pace of expenditure on internal tea promotion, as would be observed from the following table, it seems the Tea Board has not hitherto attached due importance to this activity.

TABLE 5.2—*Tea Board's expenditure on promotion**

						(Rs. lakhs)	
Year						Internal	External
1955-56	..	..	..	..	..	21.47	53.80
1960-61	..	..	..	..	..	13.45	30.11
1965-66	..	..	..	..	..	6.90	84.87
1970-71	..	..	..	..	..	5.75	134.53

The Tea Board seems to be spending less and less on internal promotion of tea. The Commission considers it essential that the machinery for internal promotion is again set in motion for promoting domestic consumption of tea.

5.23 The Commission feels that India's effort for promotion of tea exports to other countries has weakened considerably after its withdrawal from the International Market Expansion Board in 1952. In spite of higher allocations in the recent years, the Tea Board has not made much headway in the free currency countries because of its weak promotional programmes. A recent development in the Indian tea industry is the setting up of the Tea Trading Corporation of India. There is need for the Tea Trading Corporation to organise intensive propaganda campaign in favour

*Source—Memorandum on "Tea Promotion—A New Approach" submitted to the Government of India by the Indian Tea Association and the UPASI—1972.

of the qualities and varieties of tea exported from India in the potential and established markets. This apart, India should also take a lead in the FAO Standing Committee on Tea Promotion to revitalise world tea promotion and bring about the creation of an adequate machinery for the purpose.

Measures for boosting exports

5.24 The Commission has noticed that in view of the potential for production which exists in the country there is a case for pursuing an active export promotion policy conceived in terms of retaining the present levels in respect of traditional countries and expanding the exports to non-traditional countries. Several fiscal measures are required to boost up the export of tea. In the case of Japan, customs duties and quantitative export restrictions imposed by that country on imports of both bulk and packaged tea would have to go. Other importing countries, while exempting generally customs duty on tea imported in bulk have retained the customs barriers on packaged tea. High taxes on consumption of tea in several developed countries are also acting as a constraint on expansion of exports of tea from India. The duties imposed by other countries on tea essences and extracts or instant tea are also inhibiting Indian trade in these new items. A study of tariff and non-tariff barriers against tea imports in different countries would be useful for working out specific export strategy for each country. The Commission also recommends that all duties levied at the point of export should be rebated. At present only common tea is enjoying this benefit and there is an equally strong case for all good quality teas getting a similar concession.

5.25 An inhibiting factor in the export promotion drive for tea is the cost of production which has been showing an increasing trend in the recent past. This will be evident from the following cost data available for the years 1966 to 1970:

TABLE 5.3—Zone-wise cost of tea inclusive of excise duty*
(Rupees per kg)

Excise Zone	North India		South India		All India	
	1966	1970	1966	1970	1966	1970
I	4.73	4.99	4.30	4.67	4.51	4.86
II	5.45	5.74	4.73	6.02	5.09	5.86
III	8.41	11.26	..	..	8.41	11.26
IV .. ..	..	..	4.04	4.90	4.04	4.90
V	6.47	7.54	..	..	6.47	7.54

*Source—Tea Board

It has been reported by the Tea Board that cost of production of tea in India is higher than that of other producing countries, particularly East African countries. On this account India has been facing severe competition in the international markets from the East African countries. It is essential that this aspect is examined in detail by the Ministry of Commerce. In the long run, however, the rise in yield per hectare of tea would lead to a reduction in the per unit cost of tea.



PART III COFFEE SECTION I EXPORTS

Trend of exports

6.1 Exports of coffee from India have increased from 19.69 million kg valued at Rs. 7.22 crores in 1960-61 to 50.86 million kg valued at Rs. 32.93 crores in 1972-73. There was, however, no consistent upward trend during the period leaving aside 1960-61 and 1972-73 as will be seen from the following table:

TABLE 6.1—*Exports of coffee from India**—1960-61 to 1972-73

Year	Quantity (million kg)	Value@ (Rs. crore)
1960-61	19.69	7.22
1961-62	29.71	9.01
1962-63	20.42	7.61
1963-64	23.34	8.30
1964-65	30.69	13.35
1965-66	26.50	12.94
1966-67	25.83	14.44
1967-68	33.97	18.18
1968-69	28.74	17.96
1969-70	32.38	19.62
1970-71	32.19	25.11
1971-72	35.70	22.07
1972-73	50.86	32.93

6.2 Appendix III gives the total imports of 25 leading coffee importing countries of the world and the corresponding **exports from India during the calendar years 1966 to 1972. It will be observed that, on an average, exports of coffee from India amounted to 1 per cent of total world imports during these years. During the individual years in this period, the share ranged from 0.8 per cent (1966 and 1968) to 1.2 per cent (1967 and 1972).

*Source—Monthly Statistics of Foreign Trade op cit.

@Vide footnote on page 4.

**Vide footnote on Page 5

6.3 Though India is exporting coffee to a large number of countries, her exports have been of a significant order in the case of only a few of them. Annual average exports amounted to 9.6 million kg to USSR, 5.8 million kg to USA, 3.7 million kg to Yugoslavia and 2.5 million kg to Democratic Republic of Germany. The following table gives an idea of the percentage share of coffee from India in the total imports made by the leading buyers during the calendar years 1966 to 1972 :

TABLE 6.2—*Percentage share of coffee of Indian origin in the imports made by selected countries during 1966 to 1972*

Year	USSR	Yugoslavia	Germany (DR)	Poland	World
1966	21	18	9	2	0.8
1967	37	16	4	9	1.2
1968	19	11	9	8	0.8
1969	21	11	10	7	1.1
1970	20	14	8	3	0.9
1971	25	11	3	Nil	1.0
1972	41	Nil	Neg	3	1.2
Average	26	11	6	4	1.0
Average annual exports from India (m. kg)	9.6	3.7	2.5	1.2	32.6

It will appear from the above table that the percentage share of the coffee from India in the total imports of USSR has gone up in the years 1971 and 1972. In the case of Yugoslavia and Germany (DR) there was a sharp fall in exports during the last three years. In 1971 there were no exports to Poland. In 1972 which was otherwise a year of record exports for India, exports to Yugoslavia and Germany(DR) were negligible.

6.4 USA ranks first among the coffee importing countries of the world. Though exports of Indian coffee to this country have been substantial ranging from 2.8 million kg in 1966 to 7.8 million kg in 1967 during the period under review, India's share in that country's total imports has been only nominal being around 0.5 per cent. In addition to USA, in the case of a few other leading importing countries also (like Germany (FR), France, Italy,

Sweeden and UK) the share of coffee from India is only nominal. For some of these countries, however, the peak level of exports reached in 1972 was substantially higher than the order of average annual exports to these countries during the period 1966 to 1972, as will be seen from the following table:

TABLE 6.3—*Annual average exports of coffee to selected countries during 1966 to 1972 as compared to the peak levels.*

(Thousand kg)

Country	Peak level exports (1972)	Average annual exports
Germany (FR)	1,581	749
U. K.	1,272	629
Italy	2,595	728
France	1,528	749
Netherlands	1,543	558

6.5 The above analysis shows that at present only a few countries lift a significant part of their requirements from India. In the case of several leading importing countries India's share is negligible though in respect of some of them the exports in 1972 were significantly higher than the average annual exports. This holds out the hope that, given the proper export promotion measures, it might be possible for India to improve its export performance vis-a-vis these countries. Whereas exports to quota countries are to be effected within the framework of International Coffee Agreement, there is no such limit in case of non-quota countries. Therefore, the possibilities for stepping up exports to these countries, namely, USSR, Poland, Hungary and Romania should receive special attention. Mention needs to be made of Japan also in this context. This country is stepping up imports both of raw and soluble coffee. It is consuming mainly Robusta coffee though, of late, Arabica variety (both washed and unwashed) accounts for an increasing share of her total imports. Brazil, Ivory Coast and Columbia are the major suppliers of coffee to Japan. There have been no exports of either raw or soluble coffee to Japan from India in recent years except in very small quantities. Since India produces both Arabica and Robusta varieties, there is good scope for exporting Indian coffee (specially soluble coffee which is considered to be of high quality) to Japan.

Longterm outlook

6.6 According to the FAO*, the world demand for coffee is expected to grow at constant prices at the rate of 2.5 per cent per annum during the decade 1970—80. For the developed countries, the rate of growth is projected at 1.7 per cent against 3.4 per cent for the developing countries and 7.0 per cent for centrally planned countries. The FAO projections imply substantially higher import requirements of the countries mentioned in the table below, which are at present meeting some portion of their requirements from India.

TABLE 6.4—*Implied import requirements of principal importers of coffee in 1980*

(million kg)

Country	Quantity Imported in 1970**	implied import requirements in 1980***	Increase	
			Actual	Percent
U.S.A.	1,189.39	1,310.00	120.61	10.2
Italy	164.80	234.00	69.20	42.0
USSR	41.60	107.00	65.50	154.8
Germany (FR) ..	316.34	373.00	62.66	20.3
France	240.38	300.00	59.62	25.0
U. K.	91.69	150.00	58.31	63.6
Japan	81.41	139.00	57.59	71.6
Canada	77.88	110.00	32.12	41.0
Spain	82.87	104.00	21.13	25.3
Netherlands ..	111.82	129.00	17.18	15.2
Sweden	108.25	122.00	15.75	15.1
Belgium	62.95	77.00	14.05	22.2

6.7 Under the National Coffee Policy Plan (1970) prepared in pursuance of the Resolution of the International Coffee Organisation, the Coffee Board has projected export of coffee for 1980-31 on the following two assumptions:

- (a) demand for coffee in case of quota countries would grow at 3 per cent per annum; and

Source—*Agricultural Commodity Projections, 1970—80.

**Food and Agriculture Organisation of the U. N.

***Agricultural Commodity Projections 1970—80, Vol. I, FAO (Pages 219 and 222).

(b) export of coffee to non-quota countries would grow at the rate of 10 per cent per annum.

The Ministry of Commerce is also reported to have worked out the target of export of coffee for the Fifth Five Year Plan on the same assumptions. The order of exports projected for 1978-79 and 1980-81 is indicated in the following table :

TABLE 6.5—*Projections of export of Indian Coffee*

			(million kg)	
			1978-79 (Fifth Plan Target)	1980-81
(A)	Exports to quota countries	.. ..	29.0	30.0
(B)	Exports to non-quota countries	.. ..	32.0	34.0
	Total	.. ..	61.0	64.0

At present India is exporting nearly 30 to 35 million kg of coffee. The projected level of exports for 1980-81 is almost double the existing one.

6.8 The Commission is of the view that the forecast of demand for Indian coffee in world markets should not be made merely in terms of postulations of the International Coffee Agreement. The scope for developing new export markets should be explored. The approach may be to estimate the broad order of the likely increase in demand, countrywise, (in terms of different types of coffee) over the next ten years followed by an assessment of the share in such demand which India can meet.

*Source—Coffee Board.

SECTION II

INTERNAL CONSUMPTION

7.1 Internal consumption of coffee over the last 5 years (1968—72) has, according to the Coffee Board, remained more or less static at about 38 million kg. With the removal of prohibition in most of the coffee consuming States, the demand for coffee is being adversely affected. Besides, the consumption of chicory, which is the only permissible admixture of coffee, has been on the increase over the last few years and has gone up from 4.5 million kg in 1966 to 11 million kg in 1971. These factors have led to an almost static consumption level of coffee, even though large quantities were available for release in the internal market. On the contrary other soft drinks are coming up fast in the rural areas. One of the important factors which works against coffee is the low keeping quality of its powder. While processed tea leaf or dust can be preserved for a long time and used with good results, ground coffee powder can hardly keep its flavour for a week or 10 days.

7.2 The target of internal consumption of coffee for the Fourth Five Year Plan was placed at 49 million kg on the assumption of an annual growth rate of 5 per cent. It is assumed by the Coffee Board that the annual growth rate of consumption after 1973-74 might be 2 per cent for a couple of years and 1 per cent for the remaining period upto 1980-81. On this assumption, internal demand for coffee in 1980-81 is estimated at 52.8 million kg

7.3 The question of internal demand for various agricultural commodities including coffee has been examined in detail by a Working Group on Demand and Supply Projections constituted by this Commission. The demand projections for coffee have been worked out by this Group on the basis of certain assumptions relating to income elasticity of demand and rates of growth of income and population. As in the case of tea, the income elasticity of demand for coffee has been worked out using the NSS data and is quite high, being 1.39 in rural areas and 1.59 in

urban areas. The aggregate consumer demand for coffee for different time perspectives has been estimated as follows :

TABLE 7.1—*Projections of aggregate consumer demand for coffee*
(million kg)

Year					Rural	Urban	Total
1975	..	..	..	..	23.05	23.48	46.53
1980	..	..	..	..	30.51	39.61	70.12
1985	..	..	..	..	41.08	69.50	110.58
2000	..	..	..	..	77.99	394.50	472.49

7.4 The Coffee Board has assessed the internal demand at 49 million kg by the end of the Fourth Plan period, based on a 5 per cent growth rate. By then, an export level of more than 47 million kg would have been reached and, therefore, a production level of 96 million kg in 1973-74 is required to support the total demand. The FAO has, in its Commodity Projections, assumed a growth rate of 3.4 per cent in internal demand for the developing countries during the decade 1970—80. The Coffee Board has formulated, during the Fifth Plan period, growth rate of only 2 per cent for a couple of years and one per cent for remaining period during 1974-75 to 1980-81. The Working Group on Demand and Supply Projections of the National Commission on Agriculture has estimated the internal demand in 1975 at 46.53 million kg which is lower than the estimate of the Coffee Board. The estimates of the Commission's Working Group, however, indicate a growth rate of 8.5 per cent per year during the Fifth Plan period and a larger rate of increase of the order of 9.5 per cent during the quinquennium 1980—85.

7.5 During the discussions held by the Commission with the Members of the Coffee Board, it was found that the general approach to coffee production had so long been to restrict the acreage and see that a favourable market was made available for the existing plantations. It was argued that the demand was very inelastic and exports were also doubtful and thus, it would be unfair to expect the existing plantations to increase the coffee acreage and create a glut in the market, thereby leading to a general slump in the coffee market. As a result of this basic approach to the problem, the whole policy of coffee export has been formulated with the limited objective of fulfilling the quantity in the International Coffee Agreement and restricting internal consumption

if the crop is low. Consistent with this approach, the Coffee Board took the decision to give up internal propaganda in favour of coffee as far back as 1959. The coffee publicity organisation with the India Coffee Houses spread over the country was maintained at the same level without any effort to force the massage of coffee across into new areas or to create consumer preference. As a result of the past policy of not encouraging new plantations and merely developing the existing plantations for better economics, production of coffee, after reaching a record level of 110 million kg in 1970-71 dropped to 69 million kg in 1971-72. The present level of production and the marked element of unpredictability which characterises it, the bid to keep the acreage down on the one hand alongwith the attempt to realise an export target of 61 million kg in 1978-79 on the other have evidently led the Coffee Board to project the internal demand till 1980 at very low levels of growth.*

7.6 The Commission during the course of evidence given before it, came across various facts which were put forward by the coffee plantation interests to show that the prospects for increased coffee consumption in the country were limited. The argument was that ready-made soft drinks and especially Coca Cola were spreading rapidly in the urban and rural areas and people were not anxious to take to coffee which requires brewing and also milk for preparation. On the other hand, it has also been brought to the notice of the Commission that in the whole of northern India it is really difficult in most towns to get a good packet of coffee powder at a fair price. In the North, people consider coffee a status drink and would like to serve it as a status symbol but it is normally not readily available. It has also come to the notice of the Commission that whatever may be the theoretical price which the Coffee Board says, is being charged in the retail market in many of the north Indian markets particularly the smaller towns, the actual retail price of coffee is substantially higher. Stocks are not generally readily available. The Commission notices that the bulk of coffee promotion and facilities for getting coffee powder ready-made and in good quality, are broadly limited to the southern States. Before the message of good coffee could spread to north India, the Coffee Board has stopped further promotion. In south India, a good coffee shop has a facility for frying and grinding a kilogram or two of coffee seed for a customer fresh on demand so that the consumer without much difficulty can always

*Vide paragraph 7-2.

keep a fresh stock of coffee powder in his house for making good coffee. Ready-made packets of coffee powder of small weights are also readily available, which retain the flavour and which smaller consumers can purchase easily. If such a service is introduced in the towns in the North, there is no doubt that the message of coffee can spread certainly more rapidly. The Commission would further point out that in north India, particularly in Punjab, Haryana, western Uttar Pradesh and Rajasthan, development of milk production is taking place on a large scale and fresh milk is readily available in many parts of the rural areas. If there is suitable propaganda, coffee could easily make a bid for a reasonable share in the rural beverage market.

7.7 If such propaganda is made and facilities are developed, the growth can be according to the forecasts of the Working Group on Demand and Supply Projections of the Commission. For the Fifth Five Year Plan, this will be more of a theoretical exercise because the country may not be growing the coffee to support the demand. From the long term point of view, the fact may be noted that with proper propaganda and retail marketing facilities, the expected growth in demand will support a much higher growth in production than five or six per cent per annum during the next decade.



SECTION III PRODUCTION

8.1 Estimates of area, production and yield of coffee in India during the period 1960-61 to 1972-73 are given in the following table :

TABLE 8.1—Area, production and yield per hectare of coffee in India—1960-61—1972-73*

Year					Area (‘000 hectares)	Production (‘000 kg).	Yield (kg per hectare)
1960-61	..	..	..	..	120.3	68,169	567
1961-62	..	..	..	..	124.7	46,036	369
1962-63	..	..	..	..	126.3	56,217	445
1963-64	..	..	..	..	129.4	69,320	536
1964-65	..	..	..	..	129.7	60,901	469
1965-66	..	..	..	..	129.0	63,681	495
1966-67	..	..	..	..	128.0	78,473	613
1967-68	..	..	..	..	128.5	57,331	446
1968-69	..	..	..	..	130.8	73,430	561
1969-70	..	..	..	..	130.8	63,619	486
1970-71	..	..	..	..	136.5	1,10,231	808
1971-72	..	..	..	..	139.5	69,000	495
1972-73	..	..	..	..	n.a.	91,000	n.a.

Between 1960-61 and 1970-71 area under coffee has gone up by about 16 per cent. Production of coffee, on the other hand, went up by about 62 per cent i.e. from 68 million kg in 1960-61 to 110 million kg in 1970-71 though in 1971-72 it declined to 69 million kg. According to the latest estimates of the Coffee Board, production has again improved to 91 million kg in 1972-73. The annual compound growth rate of production during the period 1960-61 to 1970-71 was 4.0 per cent. Area increased at the rate of 0.8 per

n.a.—not available.

*Source—Coffee Statistics—1969-70 and 1970-71 published by Coffee Board. Estimates for 1969-70 to 1972-73 have been obtained from the Coffee Board.

cent and yield at 3.1 per cent per annum. There have been wide variations in the annual crop in recent years, which underline the marked element of unpredictability about coffee as a permanent plantation crop.

8.2 The three important coffee producing states are Tamil Nadu, Karnataka and Kerala which together account for about 99 per cent of the area under coffee. Karnataka alone accounts for nearly 60 per cent of the area. The balance of one per cent is shared by Andhra Pradesh, Assam, Orissa, West Bengal, Madhya Pradesh, Maharashtra and Andamans. Expansion of the area under coffee is one of the long-term measures for achieving increased levels of production. During the last few years, the returns to coffee growers have tended to stagnate due to low yield levels on the one hand and a gradual increase in the wages of labour and prices of inputs on the other.

8.3 The following table gives an idea of the growth in area, production and yield of the two major varieties of coffee grown in the country over the past decade:

TABLE 8.2—*Relative position of Arabica and Robusta Coffee**

			1961-62	1970-71	1971-72	1972-73
<i>Arabica</i>						
Area (hectares)	..	..	72,388	81,974	84,382	n.a.
Production ('000 kg)	..	..	29,270	58,348	44,100	62,000
Yield per hectare (kg)	..	..	404	712	523	n.a.
<i>Robusta</i>						
Area (hectares)	..	..	52,306	54,479	55,116	n.a.
Production ('000 kg)	..	..	16,766	51,883	24,900	29,000.
Yield per hectare (kg)	..	..	321	952	452	n.a.

It will be seen that the area under Arabica coffee, rose much more than that under Robusta. The year 1970-71 was the peak production year for Robusta variety and 1972-73 for Arabica variety, though in the year 1971-72 there was a sharp decline in the yield of both these varieties.

n.a.=not available.

*Source—Coffee Board—Coffee Statistics, 1969-70 and 1970-71, Estimates for 1970-71 to 1972-73 have been obtained from the Coffee Board.

8.4 In both Arabica and Robusta, the per hectare yield has risen phenomenally during the decade 1961-62 to 1970-71. The growth in Robusta has been more spectacular. A good deal of this development in yield is due to a number of large plantations investing in sprinkler irrigation to replicate blossom showers when these showers do not occur at the right time. This single provision changes the economy of a coffee plantation miraculously. At the same time, it will be noticed that in coffee there are a large number of small plantations where such facilities have not yet been introduced, even when water is readily available nearby. Not all plantations which have facilities for water may have introduced sprinkler irrigation.



SECTION IV

APPROACH

9.1 The analysis in the foregoing sections shows that the entire approach to coffee production programme and hence export has been vitiated so far by various inhibitions. The most glaring is the tendency to try and keep the coffee acreage down. Though the areas have been identified in many States where coffee can be grown, not much keen interest has been shown in encouraging new plantations. Increased export demand was proposed to be met by restricting internal consumption or wishing that internal consumption would not rise. From the export angle, one has to take note of the fair share of India in the International Coffee Agreement. This share is likely to be curtailed if production is not kept up to the levels required to meet internal demand, the demands of the non-quota countries and the possible quotas in the International Coffee Agreement. It is impossible to make up for all past deficiencies and raise production of coffee within the Fifth Plan period, but certainly steps can be taken to increase the production from the existing plantations by selective agronomic practices and suitable investments during this period. Meanwhile a new plantations programme has to be planned and implemented during the Fifth Plan period. This is required to attain a position of equilibrium between the fair growth of demand and the availability of supply during the Sixth Plan period and thereafter.

Classification of coffee plantations

9.2 Coffee plantations could be divided broadly into two categories according to their size:—

- (a) small holdings upto 10 hectares; and
- (b) large holdings above 10 hectares.

The following table gives the number of these holdings:

TABLE 9.1—*Number of holdings**

Year						Small holdings (Upto 10 hectares)	Large holdings (Above 10 hectares)
1960-61	..	..	..	..	..	46,021	1,385
1967-68	..	..	..	..	..	46,382	1,500
1968-69	..	..	..	..	..	48,502	1,623
1969-70	..	..	..	..	..	47,707	1,816
1970-71	..	..	..	..	..	49,031	1,820
1971-72	..	..	..	..	..	49,791	1,870

It may be mentioned that in 1970-71, 49,031 small holdings which accounted for nearly 50 per cent of the area contributed 30 per cent of the production. Holdings above 10 hectares comprising 1820 estates accounted for the balance 50 per cent of the area but their contribution to the total production was 70 per cent. The Statewise distribution of small and large holdings is given in the table below:

TABLE 9.2—*Statewise distribution of holdings*

State				Year	Small holdings (10 hectares & below)	Large holdings (Above 10 hectares)
Karnataka	..	..	..	1969-70	17,241	1,275
				1970-71	17,907	1,297
				1971-72	18,443	1,351
Tamil Nadu	..	..	..	1969-70	9,005	266
				1970-71	8,823	266
				1971-72	9,020	258
Kerala	..	..	..	1969-70	20,265	274
				1970-71	21,106	256
				1971-72	21,154	260
Rest of India	..	..	..	1969-70	1,196	1
				1970-71	1,196	1
				1971-72	1,194	1

Source—Figures for 1960-61 to 1970-71 are Coffee Board's estimates as quoted in IIFT's Working Document on Cost Aspects of Selected Export Commodities prepared for this Commission. Estimates for 1971-72 are as published in November, 1973 issue of the Journal 'Indian Coffee'; published by the Coffee Board.

**Source—IIFT's Working Document, op. cit.

The average yield of coffee from holdings of 10 hectares and below ranges from 250 to 350 kg per hectare whereas holdings in the range of 80 to 100 hectares have a yield of as high as 700 kg per hectare. Since the current land policy is in favour of small holdings, the problem of increasing their yield assumes greater urgency.

9.3 The yield levels obtaining in large coffee plantations in India are comparable with those in other leading producing countries though the management aspect of some of these plantations could be further improved. The UPASI can render consultancy service in this field. The major part of the increase in coffee plantations will have to come from the small and medium holdings. After discussing with the Coffee Board and other concerned interests, the Commission has come to the conclusion that plantations of less than 2 hectares cannot be made viable even with improved cultural practices, better planting material or extension efforts. In 1968-69, such holdings numbered 33,452 accounting for nearly 17 per cent of area but only 9 per cent of production of coffee. It is argued in certain quarters that plantations of the size upto 25 hectares could be classified as small plantations. The Commission is of the view that plantations in the size range 2 to 10 hectares can be made viable if they are given proper input services and adequate extension support. These plantations should be classified as potentially viable small holdings.

Small holdings

9.4 In spite of favourable factors like availability of ready finance from several agencies, advisory services, awareness of the benefits of intensive cultivation and above all, assured prices, the yield rates of coffee on small holdings continue to be low. In 1950, the Coffee Board launched a development programme with special reference to uplifting the small growers, and a number of schemes for financial and technical assistance to these growers were taken up. According to the Report of the Development Sub-Committee appointed by the Coffee Board to study the problems facing small growers of coffee (1971), of the total loans disbursed by the Coffee Board under different schemes, nearly two-thirds were under the hire-purchase loan scheme; the balance was in respect of other schemes, viz., replanting loan scheme, intensive cultivation loan scheme and working capital loan scheme.

9.5 The bigger growers have generally benefited by such assistance and small growers could not gain much. That the financial assistance to the small growers hitherto received from the

Coffee Board has not been on a scale sufficient enough to help them to increase their production capacity is evident from the fact that the average yield of their holdings has shown an increase of 17.5 per cent only over a period of 4 years compared to an increase of 53 per cent realised by the bigger coffee estates through judicious use of fertilisers, sprinkler irrigation under the hire-purchase scheme and by adoption of plant protection measures. However, given adequate credit facilities, proper technical advice and extension support, small coffee growers could also achieve a similar measure of increase in yield. The Small Farmers Development Agency (SFDA) and Marginal Farmers and Agricultural Labourers (MFAL) programmes are being organised with the basic objective of making the small and marginal holdings economically viable through a judicious combination of input supply and extension advice backed by adequate credit facilities. The Commission is of the view that it should be possible to bring the small coffee growers within the purview of similar development programmes.

9.6 The nature of problems faced by small growers differ widely from region to region. In Kerala, for instance, most of the small coffee growers have no legal right in the lands occupied by them and are treated as squatters. As a result, neither the Coffee Board nor any other institutional agency can make credit resources available to them. It is necessary to take up the question of settling the rights of these people in the land so that a programme for improvement of the plantations can be launched. The Coffee Board should take the initiative to enumerate and register these growers and seek early decision from the Government of Kerala and take such other steps as would entitle the small growers to the benefits of the development schemes during the Fifth Plan Period.

9.7 Nearly 43 per cent of the holdings are unregistered. These are mostly small holdings. As they are unregistered, they are outside the purview of the Coffee Board and hence outside the scope of any scheme of development that may be launched by the Coffee Board. It is necessary to bring all these holdings under the purview of the Coffee Board by registration. In a period of shortages of supply, unregistered plantations being free to dispose of their coffee in the open market, may be having some advantages. At the same time, their yield being low, in the national interest, it is necessary that they should be improved and brought to proper bearing. Under the law, coffee plantations have to register themselves with the Coffee Board and deliver

their coffee to the Board. It is thus essential that the Coffee Board takes initiative in the matter and sees that all these estates are identified and immediately registered with the Board. If any change is necessary in the legislation for this or even, for any penalties to be laid down, suitable changes may be made quickly.

9.8 Application of fertilisers in time and suitable plant protection measures on regular basis as also utilisation of sprinkler irrigation where possible and where it is economical, are the practices which have enabled the larger plantations to increase their per hectare yield significantly over the past decade. Small holdings are unable to get their fertilisers or observe their pesticide spray routines in time on an individual basis. Sprinkler irrigation on an individual basis is also too costly. Cooperatives have been formed to try and see that common services of this nature are provided to the small plantations for better production. Unfortunately, these cooperatives except one have not been of much use to the small farmers. This is because the cooperatives have not got the necessary credit or services support. If improvement is to be made in the production of the small estates, an institutional framework is necessary which will give them the essential facilities in a package at one centre. The Farmers' Service Society concept has been recommended by the Commission for agricultural credit on an area basis, to all the small and marginal farmers in an area. This Society gives short, medium and long term credit and also arranges the input services and, where necessary, provides the marketing facilities. Such a Society is directly financed by a commercial bank. The structure is that of a cooperative but the financial rules of the cooperative are subject to the approval by the commercial banks who have the Managing Director of the Society as their man, trained in banking and placed in the cooperative for professional management. It is recommended that for suitable regions in the plantation area, Farmers' Service Societies may be formed to deal with the coffee plantations of small holders in the area. It should be possible to work out a viable society based on the number of hectares covered by the society. The facilities for hire-purchase of sprinkler irrigation and pesticides spraying equipment and other inputs should be made available to the Farmers' Service Societies. The Coffee Board can take the leadership in organising these societies in areas where small holders are thickly congregated.

9.9 Gap filling may be an important aspect of rehabilitation of small holdings under coffee. If the gaps are filled with clones of the latest high-yielding varieties suited to the plantation, it would gradually bring up the level of production in the plantation and it will not impinge upon the production levels already achieved and which can anyhow be improved by the better agronomic practices that have been recommended. Such programmes of gap filling should be encouraged by the Coffee Board on an intensive scale in the small holdings after a quick survey of the magnitude of this work. A period of 2 to 3 years should be taken for completing the gap filling programme in the small plantations so that increases in yields are obtained quickly during the Sixth Plan period.

9.10 In addition, if the anticipated rise in internal demand is to be met, much larger plantations have got to be developed in suitable terrain. Large areas ideally suited for coffee are being planted to other crops like pineapple, oranges, etc. in several States. The scope for growing coffee in forest areas of Kerala, Karnataka and Tamil Nadu needs to be explored. It is reported that the forest Department of Andhra Pradesh is trying to introduce coffee plantations on an experimental basis in Chintapalli forests. On a rough assessment about 400 hectares of good coffee land are available in Visakhapatnam forest belt alone besides sizeable areas in Orissa. In an area like Malnad, an area programme could be developed for cultivation of coffee as part of Hill Area Development Programme.

9.11 The Coffee Board has examined the suitability of areas in various States and has identified some areas in Andhra Pradesh, Orissa, Assam and Tripura which can be usefully brought under coffee to meet the rising demand. In addition, in the States of Tamil Nadu, Karnataka and Kerala, areas suitable for coffee are still available and can be brought under new plantations. Such areas have to be identified. The Orissa State has a scheme for rehabilitating the repatriates from Sri Lanka on about 2430 hectares identified to be suitable for coffee cultivation. It is understood that the need for establishing a Plantation Corporation is being felt in view of the present weak administrative structure to run the programme.

9.12 In the new areas coming under plantation, it is desirable to systematically develop small holders' coffee plantations on the pattern of the Tea Development Authority in Kenya. Each

holder can be allotted two hectares out of a large plantation developed on a plantation basis by a common Corporation. Common services may be provided by the Corporation on a fair fee. The processing and marketing facilities may also be organised by the Corporation on behalf of the members. Each member will be responsible for looking after his portion of the plantation and carrying out the labour chores necessary. He will get the benefit of the produce only; thereby individual ownership and, at the same time, overall efficiency would be maintained. The plots can be allotted from the beginning and the labourers of the family can be employed on the reclamation and maintenance of the plantations till they come to bearing. During this period they can be paid wages. The cost on reclamation of each holding as also the labour charges incurred up to the bearing stage of the holding, net of any subsidies granted by the Coffee Board, should be repaid by the beneficiary from the sale of his produce over a number of years. The Coffee Board can work out a model scheme based on actual investigation in a typical area in each State and advise the States on planning this programme on a large scale during the Fifth Plan period.

9.13 A plantation of less than two hectares has been shown to be not viable. If Government land suitable for coffee plantation is available in the neighbourhood, it is desirable that, as a first priority, sufficient extra land is allotted to these small holders to make up a total holding of not less than two hectares. The Coffee Board should take up a systematic programme of this nature in consultation with the State Governments and also arrange for the plantation of new areas through the small holders as a new Plan scheme with appropriate phasing.

9.14 Arabica and Robusta coffee do best at different altitudes. It is noticed that in some areas where both Arabica and Robusta grow, the varieties have been planted at the wrong altitudes. A mere change of the variety to suit the altitude would increase the production. It is found that there are horticultural farms at altitudes where Arabica or Robusta will give much better returns under scientific plantation techniques. A change-over to coffee in such areas is indicated. These adjustments of varieties in the existing plantation areas may give an increase in yield.

9.15 Though the question of finding new areas for coffee plantations is vital in the context of the possible escalation of

demand in the coming years, it is also necessary to take away some areas from coffee or to encourage subsidiary crops in certain coffee areas to increase the income levels of small growers. It has been found in some areas that coffee has been grown at an altitude where it may not do well. In such areas, probably, a horticultural crop like oranges or pineapple may do better. This is the situation in Coorg. The suitability of land for coffee vis-a-vis horticultural crops in such marginal areas should be studied and suitable area programme be prepared. A planned diversification programme of production in these marginal tracts may be necessary to off-set the loss generally incurred by growers consequent on the low yields of coffee in these areas. Suitable alternative crops would have to be found for these tracts with a view to improving the economics of growers and reducing their dependence on a single crop, namely, coffee which gives very meagre return. The Diversification Fund available with the Coffee Board should be deployed for this purpose. The Commission's discussions with the Coffee Board have revealed that this Fund is not being utilised properly.

Improved cultural practices

9.16 The age of existing plantations is an important factor responsible for low yield levels of coffee. The Plantation Enquiry Commission (1957) had estimated that about 40 per cent of coffee of south India needed to be replanted. The position is not much different even today. About 50 per cent of the existing plantations are reported to have passed their prime period of bearing and some of them are on the verge of total decay. It is reported that 30 per cent of the plantations in India are as old as 70 years, 9 per cent between 60 and 70 years, 12 per cent between 50 and 60 years and only 49 per cent are less than 50 years old. Assuming that the useful life of a coffee plant is about 50 years, there is an urgent need for taking up replantation programme on a large scale. It is worth mentioning that a survey conducted by the Indian Institute of Foreign Trade in 1968 had estimated that an outlay of Rs. 31.5 crores would be needed to implement a programme of gradual replantation of 63,000 hectares (or about 50 per cent of the total area under coffee) over a period of 5 years at the rate of Rs. 5,000 per hectare. The Commission feels that the main thrust of the production strategy in the case of coffee should be maximisation of the yield levels through appropriate replantation and intensive cultivation programmes.

9.17 Timely irrigation is considered to be quite essential for coffee plantation. Sprinkler irrigation can, in an appreciable measure, reduce the crop losses caused by insufficient or untimely blossom showers on coffee estates. It would be useful to make a survey of coffee estates having adequate water resources nearby with a view to assessing the total extent of irrigable area under coffee. The Commission has been told that even where water resources are available, planters are not willing to harness them on account of high costs involved. Irrigation does not present a problem in large holdings where the economics justify the cost but in smaller holdings where one water source has to serve the needs of several holdings, joint or cooperative works need to be specially developed. The Commission suggests that detailed studies of irrigation requirements for small coffee holdings should be made by a combined pool of experts from the Coffee Board, UPASI and other Associations and the concerned State Governments. On the basis of such studies, the extent of the area which can be brought under irrigation at reasonable costs, the total investment required and the share which the State Governments should meet as subsidy for small growers should be assessed.

9.18 It has been noticed that the coffee yield fluctuates in alternate years. Coffee marketing will, therefore, have to allow for this biennial fluctuation in yields in planning both exports and internal marketing through creation of a suitable buffer stocks.

Cost of production

9.19 The following table gives an idea of the trend in cost of production of coffee in recent years:

TABLE 9.3.—*Trends in cost of production of Coffee**

(Rs. per quintal)

Year	Arabica	Robusta
1966-67	445.02	292.36
1967-68	476.24	385.32
1968-69	468.20	404.82
1969-70	536.45	398.20
1970-71	527.88	364.63

*Source—IICT's Working Document op. cit.

It is evident that the cost escalation amounted to 18 per cent for Arabica and 25 per cent for Robusta during the period under the review. India is among the countries with a high cost coffee industry. In fact, the cost is so high that a slight fall in international prices could make export of Indian coffee even to West European countries and the USA, unremunerative. This is largely due to high cost of inputs (especially pesticides) and wages on the one hand and low yield levels on the other. It would be necessary to lay down a norm of yield which ensures a reasonable return to the farmer in each producing zone keeping the cost of production in view. The suitability of the existing areas to continue under the crop should be determined on the basis of this norm. The Coffee Board should also examine in detail the cost aspects of the industry with a view to evolving optimum input packages.

9.20 High costs are also partly the result of the high incidence of taxes and duties levied on coffee. Coffee sold in the domestic market is subject to an excise duty of Rs. 7.50 per quintal. An equivalent customs duty is imposed on coffee produced in the country and exported. Besides, Central excise duty is levied at the rate of Rs. 100 per quintal. Exports of coffee are exempted from the levy of Central excise duty though they are subjected to customs duty at the rate of Rs. 50 per quintal. Further, sales tax is levied by the three principal southern States on the value of coffee inclusive of excise duty at the rate of 8 per cent in Karnataka, 5½ per cent in Tamil Nadu and 5 per cent in Kerala. Incidentally, this tax structure supports the Commission's view that the internal consumption of coffee has been kept in check to a large extent by fiscal measures. The Commission feels that revenue considerations should be of secondary importance in the context of the need for pushing up the production levels of coffee so as to meet the increasing requirements of internal consumption and an active policy for export promotion.

Coffee promotion

9.21 The Coffee Board was set up in 1942 under the Coffee Marketing Expansion Act for fulfilling the dual objectives of providing an orderly development of the coffee industry in the country and an effective marketing organisation for the same. The Coffee Board maintains two separate Funds, namely, General Fund and Pool Fund. The General Fund is utilised to finance

the administrative expenses as also the expenses related with the discharge of the following functions :—

- (a) promotion of agricultural and technological research in the interests of the coffee industry;
- (b) assistance to coffee estates, where necessary, for their development;
- (c) undertaking measures for promoting the sale of coffee and increasing its consumption in India; and
- (d) meeting the expenses for securing better working conditions on estates for the work force.

Excise duties on all coffee sold in the internal markets and customs duties levied on the exporters on all coffee that is exported out of the country are credited to the General Fund to meet these expenses. The Pool Fund, on the other hand, comprises all the sums realised by the sale of coffee by the Board. The entire amount in this Fund is distributed to the growers according to the quantity and type of crop delivered after deducting direct marketing expenses including cost of storing and curing.

9.22 It is, thus, apparent that all the developmental activities as well as propaganda work of the Board are financed directly by the growers without this expense being passed on to the consumer as is the general impression prevailing. The excise duty is a direct levy on the growers and is collected from them by deducting this amount from the Pool payments made to them. The customs duty, though it is not directly levied on the growers, is also a charge on them in so far as the export prices get depressed by this amount at the time of sales.

9.23 Propaganda was the primary function of the Coffee Board during its initial years as there was a surplus coffee which could not be effectively marketed either in the internal or export markets. But soon a situation arose when there was a short supply, and with a view to making available adequate quantities for export, the tempo of internal propaganda was curtailed. The situation has now taken a full circle with rise in production and there is again an urgency for stepping up propaganda work in the country. Unfortunately, however, funds have not been made available for the various schemes put forward by the Board. A suggestion has been made that propaganda should be financed from the Pool Fund. This is contrary to the intention

of the creation of the Pool Fund and goes against the purpose for which the Fund was created. Promotional work in other commodities like tea, coir, jute, cashew, spices, etc. is also being undertaken but nowhere a suggestion has been made that cost of this work should be deducted from the sale proceeds. Prima facie, the Pool Fund cannot be utilised for the purposes of internal promotion simply because a pooled marketing system enables the Board to have a direct access to this Fund. The present arrangement of maintaining two separate Funds might continue. As the Pool Fund cannot be utilised for promotional efforts and the possibility of increasing the excise and customs duties which feed the General Fund is limited, the Commission feels that adequate funds will have to be placed at the disposal of the Coffee Board by the Government for undertaking promotional activities.

9.24 The Coffee Board is advancing working capital loans at present. The Commission does not favour this practice which leads to unnecessary locking up of development funds of the Board. This is a responsibility of the Banking system and properly run plantations should be able to get the necessary accommodation from the banks.

9.25 The interest facilities which the Coffee Board might be giving could be provided by the banks as also the selectivity for such facilities. It is, therefore, not necessary for the Coffee Board to extend short-term loans to the coffee plantations. The banking system should look after these requirements. There is also need to involve institutions like Agro-industries Corporations for equipment hiring and other facilities. It is suggested that in the transition period during which the above mentioned links with the institutional agencies are established, an appropriate amount may be earmarked by the Coffee Board to help the plantations.

PART IV
TOBACCO
SECTION I
EXPORTS

Trend of exports

10.1 During the period 1960-61 to 1972-73 exports of unmanufactured tobacco from India have varied between 37.4 million kg (1966-67) and 94.5 million kg (1972-73). The value of exports ranged from Rs. 14.04 crores (1961-62) and Rs. 61.07 crores (1972-73). The year-wise data are given in the following table :

**TABLE 10.1—Exports of tobacco (unmanufactured) from India*—
1960-61 to 1972-73**

Year					Quantity (million kg)	Value** (Rs. crore)
1960-61	..	..	..	..	45.8	14.61
1961-62	..	..	..	..	44.4	14.04
1962-63	..	..	..	..	60.2	18.00
1963-64	..	..	..	..	63.4	21.09
1964-65	..	..	..	..	78.2	24.38
1965-66	..	..	..	..	56.6	19.58
1966-67	..	..	..	..	37.4	21.52
1967-68	..	..	..	..	55.4	34.85
1968-69	..	..	..	..	52.7	33.16
1969-70	..	..	..	..	53.6	32.71
1970-71	..	..	..	..	47.5	31.40
1971-72	..	..	..	..	57.3	42.25
1972-73	..	..	..	..	94.5	61.07

It will be seen that exports reached an all-time high of 94.5 million kg in 1972-73, registering an increase of 65 per cent over the level attained in the previous year. Exports of Virginia

*Source— Monthly Statistics of Foreign Trade op- cit-

** Vide foot-note on page 5.

Blue Cured (VFC) were 83 million kg or 88 per cent of the total tobacco exports in 1972-73. The main factors responsible for this record performance were the exports to Bangladesh, the record off-take of tobacco by USSR and a substantial step-up in the consignments made to other centrally planned economies. With this record level of exports, India accounted for a higher share of 7 per cent in the world imports, which, too, were at a high level, against the annual average of 5 per cent.

10.2 Appendix IV gives the total imports of tobacco by 24 leading importing countries of the world and the corresponding exports from India during the calendar years 1966 to 1972. It will be observed that on an average, exports of tobacco from India amounted to 5 per cent of the total world imports during these years. During the individual years of this period the share ranged from 4 per cent in 1966 to 7 per cent in 1972. Of these 24 countries, annual average exports of tobacco from India were of a significant order, being more than 1 million kg, in the case of only six countries. The following table gives an idea of the exports to these countries and the percentage share of tobacco from India in their total imports:

TABLE 10.2—*Percentage share of tobacco of Indian origin in the imports made by selected countries—1966 to 1972*

Year	UK	USSR	Japan	UAR	Germany ^a (DR)	Belgium	World
1966	12	7	4	4	6	6	4
1967	18	8	10	48	11	4	6
1968	16	8	12	12	8	5	5
1969	16	18	9	6	7	3	5
1970	14	10	8	6	10	2	5
1971	15	24	10	..	5	2	5
1972	12	36	7	1	..	2	7
Average	15	17	8	11	7	3	5
Average annual exports from India (m. kg.)	19.5	11.5	3.1	1.5	1.5	1.1	54.4

Thus, India exports the maximum quantity of tobacco to U.K.; and has, on an average, met 15 per cent of U.K.'s total import requirements. The next leading buyer is USSR and exports from

^aVide footnote on page 5.

India to that country have gone up sharply in the last two years. Japan gets, on an average, 8 per cent of her import requirements from India though this share was higher at 12 per cent in 1968. In the case of UAR also, the share of tobacco from India has declined from 48 per cent in 1967 to 1 per cent in 1972.

10.3 Germany (FR) ranks first among the tobacco importing countries of the world but exports from India to this country are only nominal. The same position obtains in respect of other leading tobacco importing countries like USA, France, Netherlands and Spain.

10.4 There are a few countries which rank low as importers of tobacco but import significant quantities from India. The average annual and peak level exports of tobacco to these countries have been as follows:

TABLE 10.3—*Annual average exports of tobacco to selected countries during 1966 to 1972 as compared to peak levels*

				(million kg)		
Country				Average annual exports	Peak level exports	
				Qty.	Percentage share of India in total imports of the country	
Ireland	0.8	1.7 (1970)	37
Hungary	0.6	1.4 (1972)	18
Singapore	0.7	1.1 (1969)	6

10.5 Thus, at present, only a few countries lift a significant part of their requirements from India. In the case of several leading importing countries, India's share is negligible. However, there in a small group of countries, which even though not leading importers of tobacco, obtain a sizeable share of their total import requirements from India.

SECTION II

INTERNAL CONSUMPTION

11.1 It is estimated* that during the period 1960-61 to 1970-71, the overall consumption of tobacco in the country registered a decline of 1.79 per cent per annum (compound), though the per capita consumption of some types of tobaccos has been on an increase. For instance, the per capita consumption of VFC tobacco has been increasing at an annual rate of 4.13 per cent and of other cigarette types by 2.04 per cent during the same period. It is envisaged in the draft Fifth Five Year Plan that the present trends in consumption of various types of tobacco will continue during the Plan period and the total requirement of raw tobacco for domestic consumption during the year 1978-79 will be around 286 million kg as against an estimated 255 million kg in 1970-71. As regards the export demand, it has been stagnating more or less at 55 million kg against which the level of export projected in the Fifth Five Year Plan for the year 1978-79 is 73 million kg.

11.2 Based on the above estimates of requirements of tobacco for domestic consumption and exports in 1978-79,** the production targets for different types of tobacco by the end of the Fifth Plan period are envisaged below:

TABLE 11.1—*Production targets for different types of tobacco under the Fifth Five-Year Plan†*

					(million kg)	
Type of tobacco					1973-74 (base level)	1978-79 (target)
Virginia	..	..	..	..	120	160
Other cigarette types of tobacco	..	..	..	..	40	45
Bidi tobacco	..	..	..	..	100	110
Others	..	..	..	..	110	110
Total					370	425

†Source — Draft Fifth Five Year Plan — Vol. II Planning Commission.

*Vide paragraph 1.172— Draft Fifth Five Year Plan 1974-79— Volume II.

**Estimates of demand for domestic consumption and exports given in para 11.1 do not tally with the production target for 1978-79 given in table 11.1 because of the differences in the conversion ratios used and the methods of registering the two sets of data.

11.3 The important economic indicators which have to be kept in view in projecting the internal consumption of tobacco for longer periods are the increase in per capita income and income elasticity of demand as also the projected levels of population and its urban-rural distribution.

11.4 Tobacco is an important source of revenue to the national exchequer and the excise duty on tobacco is estimated to constitute more than 50 per cent of the ultimate consumer price of tobacco. Hence, the fiscal policy of the Government is a major determinant of the order of indigenous demand for tobacco and tobacco products. Further, it is reported that in the U.K. and the USA a few big cigarette manufacturing companies are engaged in developing synthetic tobacco. If these efforts prove successful, there can be a considerable decline in the demand for natural tobacco. Moreover, the medical reports on health hazards due to smoking may also affect the demand for tobacco. In the advanced countries like the USA, the U.K. and West Germany, steps have already been initiated to discourage consumption of tobacco through ban on promotional advertisements on television, radio, newspapers, etc. The Government of India is also contemplating to take up a multi-media publicity campaign to discourage consumption of tobacco and tobacco products. Lastly, the most important form of consumption of tobacco all over the world is cigarette smoking. Although there is an increasing trend in the production of cigarettes, the quantum of leaf tobacco used in the manufacture of cigarettes does not show any corresponding increase. The major factors involved in the declining share of utilisation of unmanufactured leaf tobacco for cigarettes include (a) the increased use of filter tipped cigarettes; (b) greater utilisation of light fluffy tobacco and of stems and other byproducts; (c) the trend towards mini-cigarettes and thinner cigarettes; and (d) a more loosely packed tobacco column and increased use of manufactured tobacco sheets. In India, the production of filter tipped cigarettes, at present, constitutes about 11 per cent of the total cigarette production. This trend is likely to be accelerated.

11.5 The past trend in the per capita consumption of tobacco and tobacco products in India has been downward. Having regard to all these facts the Directorate of Tobacco Development has attempted an exercise on the aggregate demand for tobacco, variety-wise, upto the period 2000 AD. (Appendix V). These estimates imply a growth rate in per capita consumption of the order

of 1.1 per cent during 1971—80 and 2.1 per cent for the next 20 years. On the other hand, estimates of demand formulated by the Commission's Working Group on Demand and Supply Projections imply an overall annual growth of 4.7 per cent and 4.9 per cent in these two periods respectively.

11.6 As far as varieties of tobacco are concerned, the exercise done by the Directorate of Tobacco Development shows that demand for VFC tobacco will expand more rapidly than that for other varieties, and its share in the total demand might rise to 32 per cent in 1985 and 38 per cent in 2000 A.D. as against 17 per cent in 1971. The demand for other cigarette types of tobacco, namely, Natu, Burley, etc. which was 11 per cent of the total demand in 1971, might go up to 16 per cent in 1985 and 17 per cent in 2000 A.D. In regard to Bidi tobacco, though in actual quantity, demand might increase, yet its share in the total tobacco consumption is likely to decline to about 27 per cent in 2000 A.D. from the present level of 33 per cent. Lastly, demand for other types of tobacco like chewing, hookah, snuff, etc. would decline from the levels obtaining at present or remain stationary even in terms of actual quantity consumed.

11.7 The total indigenous consumer demand for tobacco at different points of time works out as follows according to these two exercises:

TABLE 11.2—*Demand Projections for tobacco*

Year					(million kg)	
					Commission's Working Group	Directorate of Tobacco Development
1971	..	..	..	..	255.00	255.00
1975	..	..	..	..	309.43	285.00
1980	..	..	..	..	386.77	282.00
1985	..	..	..	..	490.68	310.00
2000 A.D.	..	..	..	..	1004.63	430.00

The wide divergence between the two sets of figures arises from the fact that whereas the Directorate of Tobacco Development has tried to analyse carefully the trends of tobacco consumption by

varieties, the estimates made by the Commission's Working Group do not take into account the individual varieties separately. From past trends, it is obvious that chewing, hookah and snuff tobacco will be slowly going down in consumption because the new generation is not obviously taking to these varieties of tobacco consumption on any large scale. In these varieties, therefore, the forecast of the Directorate of Tobacco Development is probably more realistic than a general exercise on demand projections. Similarly, bidi consumption, though it is expected to rise, will obviously be rising at a much slower pace than cigarettes which are bound to become the more fashionable smoke as incomes increase. In this case, the Directorate's forecast of demand seems more realistic. It is noticed that the trends in the overall consumption of tobacco forecast by the Commission's Working Group and those in the consumption of VFC tobacco by the Directorate of Tobacco Development more or less coincide, and hence, the Directorate's figures could be accepted. Further, currently the admixture of Natu and Burley tobacco in cigarette tobacco is increasing. This is also supported by the evidence of the manufacturers before the Tobacco Tariff Excise Committee. It is, therefore, reasonable to assume that this type of tobacco will also rise in demand parallel to at least VFC. Subject to this modification the forecast of demand made by the Directorate of Tobacco Development might be accepted for the time being. But since many imponderable factors influence the demand trends of the commodity, it is desirable to keep a close watch on the trends of tobacco consumption so that corrective action can be taken whenever it is warranted.

SECTION III

PRODUCTION

12.1 Estimates of area, production and yield of tobacco in India during the period 1960-61 to 1972-73 are given in the following table :

Year				Area ('000 hectare)	Production (million kg)	Yield (kg/hectare)
1960-61	..	..	..	400	301	751
1961-62	..	..	..	418	335	801
1962-63	..	..	..	405	341	842
1963-64	..	..	..	441	360	816
1964-65	..	..	..	407	356	875
1965-66	..	..	..	377	293	778
1966-67	..	..	..	424	353	834
1967-68	..	..	..	424	369	871
1968-69	..	..	..	440	361	821
1969-70	..	..	..	438	337	770
1970-71	..	..	..	447	362	810
1971-72	..	..	..	458	419	914
1972-73	..	..	..	434	364	838

During the period 1960-61 to 1971-72, area, production and yield of tobacco have, on an average, been of the order of 4.23 lakh hectares, 348 million kg and 823 kg/hectare respectively. The annual rate of growth (compound) of production was 1.45 per

*Directorate of Economics & Statistics, Ministry of Agriculture. The estimates have been worked backwards from 1972-73 on the basis of all India index numbers of area and production 1959-60 to 1972-73 (Revised series) released by the Directorate.

cent for tobacco as against 1.77 per cent for non-foodgrain crops and 2.34 per cent for all crops together during this period. The expansion in area contributed more towards this growth of production; the rate of increase in area being 0.84 per cent and that of yield 0.60 per cent. As against this, in the case of non-foodgrain crops and all crops, the growth rate of yield was higher than that of area during this period.

12.2 Tobacco is grown under varied soil and climatic conditions in the country. Andhra Pradesh is the most important tobacco growing State accounting for 220,000 hectares or nearly half of the all-India area under the crop in 1970-71. Of this, only 32,000 hectares are irrigated. Other important tobacco growing States are Gujarat and Karnataka. About 38 per cent of tobacco in Gujarat is grown under irrigated conditions; the corresponding percentage of irrigated area to total area under tobacco in Karnataka is 11.

12.3 Andhra Pradesh alone produces almost 95 per cent of the country's virginia tobacco. Only 11 per cent of the area under this variety is in light soils which is considered ideal for its cultivation. Virginia tobacco grown in low lying areas, tank beds and saline and heavy black soils is unsuitable for export. Cultivation of virginia tobacco in saline and other unsuitable areas continues even though such areas have been demarcated in Andhra Pradesh on the basis of surveys conducted by the State Government and the All-India Soil and Land-use Survey Organisation. The extension agencies are trying to discourage cultivation of tobacco in these areas but the measures taken have not been very effective so far. The Central Tobacco Research Institute, Rajahmundry has, on the basis of analysis of a large number of soil samples from East and West Godavari, Visakhapatnam, Guntur and Krishna districts, come to the conclusion that the soil characteristics of these areas are not amenable for optimising either the yield or the quality of tobacco. This is a major constraint in raising the yield level of tobacco in the leading tobacco producing State.

SECTION IV

APPROACH

Assessment of export potential

13.1 While production of tobacco has tended to stagnate at around 350 million kg, exports too have remained static at around 55 million kg till 1971-72. Production target of tobacco for the Fifth Five Year Plan has been set at 425 million kg on the assumption that the trend in indigenous consumption observed in the past decade will continue during the Plan period and that export demand will rise to 73 million kg. The Commission, however, considers this export target to be quite low in the context of the performance in 1972-73 and the Ministry of Commerce has already been requested to consider an upward revision of this target. The Ministry of Agriculture has also been advised to suitably revise the production target in consonance with the revision of the export target by the Ministry of Commerce. The Commission feels that the long-term export potential for different varieties and grades of Indian tobacco should be assessed on the basis of a study of the demand trends in the different world markets.

13.2 According to the Food and Agriculture Organisation* the world import requirements of tobacco are likely to increase from 993** million kg in 1970 to 1131 million kg in 1980 which implies an annual growth rate of 1.3 per cent. The availability of tobacco from the developing countries is also expected to increase at the rate of 2.4 per cent during this period, rising from 439 million kg in 1970 to 562 million kg in 1980. Thus the prospects for stepping up exports during the next decade are good. The extent to which India will be able to exploit this advantageous position will largely depend on the pace with which she can step up the export availability of her tobacco. In the opinion of the FAO, India may find it difficult to maintain her present share in the world market due to increased requirements of tobacco for internal consumption. This view is obviously based on the assumption that India would not be able to accelerate her

*Source—Agricultural Commodity Projections (1970-80) Volume 1—FAO.

**Actual import amounted to 1012 million kg in 1970.

tobacco production very much above the anticipated consumption levels. The Commission, however, does not subscribe to this view and, instead, attaches great significance to tailoring the production programmes of tobacco so as to support the possible growth in internal demand as well as the export demand based on an active export promotion policy. The present policy is to fix the export targets in the context of the actual production levels or the production levels envisaged in the next few years assuming that there will be no radical change in the production policies and programmes for tobacco. In this process the entire exercise of fixing export targets for tobacco becomes a matter of compromise between the Ministry of Agriculture which is incharge of production and the Ministry of Commerce which handles export of tobacco. There is need for an objective assessment of the export demand for Indian tobacco.

Need for intensification of development programmes

13.3 According to the Fifth Plan proposals, it would be possible to expand exports of tobacco from 55 million kg to 73 million kg by the end of 1978-79. A Study Team on Tobacco constituted by the National Commission on Agriculture has made an attempt to work out the long-term export projections, according to which a growth rate of 3 per cent in export is envisaged for the period 1978-79 to 1983-84 and of 2 per cent from 1983-84 onwards. On the basis of these growth rates, the export demand for tobacco would be of the following order:

TABLE 13.1—*Export demand for tobacco*

Year					(million kg)	
					Export Demand	
					All types of tobaccos	VFC tobacco
1978-79	..	..	..	..	73	63
1983-84	..	..	..	..	85	75
1988-89	..	..	..	..	95	85

13.4 The export performance in 1972-73 demonstrates that there is ample scope for stepping up exports of tobacco in the near future. As against this, tobacco production has gone up at the rate of 1.45 per cent per annum and its yield at 0.60 per cent per annum during the period 1960-61 to 1971-72.

13.5 The strategy for increasing production of tobacco should cover identification of areas having good potential for irrigated virginia tobacco. Historically, virginia tobacco has been grown mostly in the heavy black soils of Andhra Pradesh which are really most unsuitable for this type of tobacco. The research workers had long before found out that much better virginia tobacco can be grown in the light soils and under irrigated conditions from wells where the water does not contain any salts. Unfortunately, for one reason or the other any attempt to introduce light soil tobacco was frustrated in the then Indian Central Tobacco Committee. It was only from 1966 onwards that a strong move was made by the Ministry of Agriculture to bring in light soil tobacco cultivation with immediate and most encouraging results. The strategy has, therefore, been to dissuade the growth of virginia tobacco in the heavy black soils, particularly where irrigation has been introduced which spoils quality of the tobacco and, at the same time, encourage new areas of tobacco cultivation in the light soils. For quite some time, it had been difficult to dissuade the tobacco growers of Andhra Pradesh from growing tobacco in the heavy soils. Fortunately, in the last two years, the introduction of the high-yielding cottons like Gujarat Hybrid-4 and MCU—5 in the Nagarjunasagar belt and the high prices which these qualities of cotton fetch, have resulted in the diversion of quite a lot of the unsuitable virginia areas to cotton. It is, therefore, reasonable to expect that very soon the heavy black cotton soils of Andhra Pradesh will be changed over to cotton from tobacco wherever possible. Hence the need arises for finding readily alternative tobacco areas in the light soil regions. The targets envisaged for light soil tobacco in the Draft Fifth Plan proposals should, therefore, be increased as otherwise there is danger of the old tobacco areas going out of cultivation and the production not having been made up by cultivating new areas.

Quality aspects

13.6 A few imported varieties such as Virginia Gold, Delcrest, Chatham and White Gold have been acclimatised and some of them are under cultivation in varying climatic conditions. Also, two VFC varieties, namely, "Dhanadayi" and "Kanakaprabha" have been evolved by the Indian researchers through recombination of available imported material. There are two other varieties, namely, H.R. 65-35 and CTRI Special which are in the final evaluation trials stage, specially suited for light and black soils. These two varieties are undergoing manufacturing trials at present.

13.7 Various tobacco importing countries present special problems in regard to quality acceptability. For instance, Germany (FR) is the only market which stands in isolation from the rest of West Europe in not purchasing Indian tobacco at all. The Commission is given to understand by the Tobacco Export Promotion Council that in spite of its best efforts to grow the types of tobacco required by Germany (FR), the existing quality characteristics of Indian VFC tobacco do not come up to the standards prescribed by the cigarette manufacturers of Germany (FR). There is need to produce low nicotine VFC tobacco to be used as neutral filler in order to enter the Germany (FR) market. It is also essential to see that this tobacco should be ripe, soft natured and open grained, thin in body, with sufficient natural oil and of lively orange colour.

13.8 Some of the East European countries hold out good scope for importing tobacco from India. While USSR, Germany (DR), Czechoslovakia and Hungary are regular markets, Poland and Yugoslavia used to purchase Indian tobacco in the early years of the last decade when the tobacco crop in Europe was affected by blue mould. Since late sixties these two countries have not been purchasing Indian tobacco. Bulgaria entered the Indian market in 1972 and made sizeable purchases of Indian tobacco to the extent of 1.73 million kg. Romania does not purchase any Indian tobacco. Most of the countries in East Europe which consume tobacco of Indian origin find the Indian VFC tobacco suitable for filler purposes and they have been purchasing almost all the grades of Indian VFC tobacco. The USSR and Germany (DR) also purchase high grades of Indian VFC tobacco besides considerable quantities of medium and lower grades. Czechoslovakia has, however, been restricting her purchases only to high grades of Indian VFC tobacco all these years.

13.9 The above account shows that a number of East European countries are good potential markets for Indian tobacco. These countries find Indian tobacco useful for filler purposes in cigarette manufacture. In addition to purchasing VFC tobacco from India, these countries also purchase considerable quantity of oriental tobacco from Bulgaria, Yugoslavia, etc. India, however, does not grow oriental tobacco in commercial quantities for export purposes. The feasibility of growing oriental tobacco in India, on an adequate scale, to meet the demand in the East European markets should be explored.

13.10 One of the major difficulties in introducing new varieties of tobacco is that the tobacco companies which lift the produce of the farmers in certain areas insist that the new material should pass through manufacturing tests as simple laboratory tests regarding leaf quality are not adequate to determine its manufacturing suitability. It is, therefore, essential that the new varieties evolved by the research institutes should be released for commercial cultivation only after they have passed the manufacturing tests by the cigarette industry. Introduction of these varieties should then receive due consideration on the part of the extension agencies.

Cost of production

13.11 High cost of production of Indian tobacco is perhaps the greatest handicap in the export drive. The cost of production is high on account of two major factors, namely, the low yield rates and traditional cultivation practices. Yield rates in India are very low compared to those in other producing countries, as will be seen from the following table:

TABLE 13.2—*Yield of VFC tobacco in important production countries during the period 1967—69**

Country	(kg per hectare)		
	1967	1968	1969
United States	2,320	2,060	2,043
Rhodesia	2,022	1,450	1,33
Korea Republic	1,808	1,788	1,806
Pakistan	1,167	1,370	1,444
Argentina	1,000	1,000	957
Brazil	938	1,075	1,689
India	814	731	823
Philippines	750	846	833
Thailand	727	704	769
Indonesia	441	500	467

13.12 Cultivation of tobacco is carried out largely with the help of animal driven ploughs. The input application is much below the desired levels. The economics of stepping up input use, specially fertilisers and irrigation have to be demonstrated on a large-scale. The Indian Institute of Foreign Trade undertook a study on cost aspects of tobacco along with some other selected commodities at the instance of this Commission. According to this study† yield rates could be sufficiently increased by the application of package of inputs consisting of fertilisers and irrigation. The

*Source—IIFT's Working Document, op. cit.

†IIFT's Working Document, op. cit.

application of these two inputs has to be closely linked so as to be fully effective. According to this study, if 18 kg of nitrogen is used with irrigation, the per hectare yield may double from the present 785 kg to 1570 kg. The additional cost on these inputs would vary from Rs. 670 to Rs. 790 per hectare but the additional income could be Rs. 1570, thus giving a net additional gain of Rs. 780 to 900 per hectare. These figures have been obtained by the Institute on an enquiry from one manufacturing concern and may be further reviewed on the basis of field trials in different tobacco producing areas. However, even if the yield increase is only two-thirds of the above estimate, there will be still a net additional gain varying from Rs. 260 to Rs. 380 per hectare. It is also possible that with higher dosages of fertilisers with one irrigation the per unit cost of tobacco cultivation may come down further and thus, Indian tobacco may become more competitive in the international markets.

13.13 Doubts are expressed in certain quarters about the quality of irrigated tobacco. It is argued that though yields might improve, the quality, specially of flue cured tobacco, deteriorates with irrigation. Some experiments on the effect of irrigation on the yield and quality of leaf tobacco in black soils were undertaken in recent years by the Central Tobacco Research Institute in their farm at Kateru. These experiments have shown that chemical quality of tobacco irrigated, when soil moisture falls down to 30 per cent or 60 per cent of field capacity, was not affected in any way. Studies on colour retention of the leaf were, however, not made in these experiments. The Directorate of Tobacco Development has indicated that the cigarette trade do not consider the leaf quality of VFC tobacco under irrigation on black soils as acceptable. The Indian Council of Agricultural Research has, therefore, undertaken multi-locational trials in varying soil textural conditions to examine this question in greater depth. Definite results from these studies are expected to be available after two or three years.

13.14 The light soil tobacco that is now grown in the special tobacco cultivation drive is mainly irrigated tobacco. The marketing results also show that this tobacco is of very high quality. Therefore, what is wanted is a quick appraisal of the amount of fertilisers that can be used in the light soil tobacco and its effect on maintenance of quality and translating this knowledge into large scale field extension programmes. This will incidentally increase the yield of tobacco in the new light soil areas.

The application of fertiliser and irrigation is said to reduce the nicotine content in the tobacco leaf. If this is so, with the general consumption trend towards the low nicotine content of virginia, this should be favourable rather than a minus point from the aspect of marketing. The proposed Tobacco Board should, therefore, go into this matter quickly in depth and lay down a policy for irrigated tobacco growing in the light soil areas.

13.15 Not only the per unit cost of production of tobacco is high, but the cost of assembling and marketing also works out to as much as 35 per cent of the price paid by the importer in U.K. according to a study made by the Directorate of Marketing and Inspection in 1969. Thus, the grower's share in the price finally realised for his produce in the international market is low. It is possible that in view of the increases in cost of various items in recent years, specially in respect of seedlings, wages, fuel and ocean freight and without any appreciable compensation in the prices, the returns to the growers might have deteriorated since 1969. Therefore, there is a strong case for devising methods to reduce the cost of assembling and marketing of the export varieties of tobacco.

13.16 Another aspect of overseas market prices of Indian tobacco, which needs mention, is the price realisation of Indian VFC tobacco in international markets vis-a-vis those of comparable varieties from other major suppliers. A study undertaken by the IIFT has revealed that during the period 1966 to 1972 while the prices of Indian tobacco were stable around 25-28 pence per lb. in the U.K. market, those from other countries, notably Canada, USA and Republic of Korea appreciated substantially. This will be apparent from the following table:

TABLE 13.3—*Average value of leaf tobacco (flue cured stripped) imported into the United Kingdom**

(Pence per lb.—inclusive of duty)

Year			Canada	USA	Korea Rep.	India
1966	..	..	29	35	@	26
1967	..	..	34	36	17	22
1968	..	..	40	38	31	25
1969	..	..	37	44	26	25
1970	..	..	38	50	26	28
1971	..	..	42	50	31	29
1972	..	..	46	52	34	28

*Source —IIFT's Working Document, op. cit.

@ Imports were of a negligible order during this year.

The Commission feels that a critical appraisal of the reasons for the wide differences in prices should be made by the Ministry of Commerce.

Measures for increasing exports of tobacco

13.17 A major handicap in pushing up exports of tobacco is the near monopoly control of large foreign concerns. Many of these firms have manufacturing interests in certain developed countries and plantation interests in certain other exporting countries. They are interested only in exporting superior grades from India to their manufacturing counterparts and in obtaining the filler tobaccos from other countries at more economic prices. It is also possible that they might be drawing their raw material from indigenous production in those countries and hence promotion of exports of Indian tobacco may not be in their interests. The Commission considers that it is essential to safeguard the interests of tobacco producers by making an inroad into the world trade in filler tobacco, especially when India has got good varieties which could find a place in the world markets provided they are offered at competitive prices. These varieties appear significantly in the imports of several countries. It would, thus, be desirable to have a second string of export in the public sector which could cut across the monopoly of foreign concerns. The Tobacco Board could be entrusted, *inter alia*, with the task of studying the preferences of the traditional buyers for tobacco with low nicotine content grown in light soil areas and taking steps necessary for improving the export prospects of filler tobacco.

13.18 With a view to ascertaining the types of tobacco in demand in various countries and the factors which are inhibiting exports of Indian tobacco, the National Commission on Agriculture addressed a Questionnaire through the Ministry of Commerce to the Indian Embassies and High Commissions in different countries; replies to which were received from the Missions in Cambodia, Singapore, Laos, Malaysia, Mexico, Sri Lanka, Burma, Venezuela, Philippines, Cuba and Thailand. These replies indicate that, except Singapore and Malaysia, the remaining countries are either self-sufficient in the varieties of tobacco which India exports or they are importing their requirements from other sources. The Indian High Commission in Singapore had furnished c.i.f. prices of unmanufactured tobacco of different origins imported into Singapore

during the year 1971 and January—June 1972. The per unit price realised was of the following order:

TABLE 13.4—*Prices (c.i.f.) of tobacco of different origins imported into Singapore*

						(S. \$, per kg)	
Country						1971	Jan—June 1972
China (Mainland)	..	..	..	..	..	1.41	1.20
India	..	..	..	..	..	3.90	3.38
Korea Republic	..	..	..	..	..	3.51	2.38
Thailand	..	..	..	..	..	2.07	2.72
USA	..	..	..	..	..	6.88	6.63

It will be seen that the average per kg c.i.f. cost of un-manufactured tobacco of Indian origin was almost one half of the corresponding price of tobacco of US origin. The High Commission indicated that the USA dominated the Singapore market supplying high grade virginia tobacco; India also supplied VFC varieties to Singapore. Low grade filler tobaccos were being supplied by China and Thailand. It is commonly recognised that Indian VFC varieties rank among the best in the world and compare well with those supplied by USA and other developed tobacco producing countries. Since apparently exports of Indian tobacco to Singapore are also of high grade VFC varieties, the Commission would urge that the Ministry of Commerce should examine the factors responsible for comparatively lower prices of Indian varieties. *Prima-facie*, this price parity does not seem to be reasonable.

13.19 Philippines, which is an exporter of tobacco, has taken a number of steps to push up her export through a well organised body called the Philippines Tobacco Board. Apart from Philippines, Canada has also been able to step up its exports primarily due to good marketing arrangements. Indian exporters do not have similar advantages. Indian tobacco in the world markets is also threatened by newly emerging sources of supply, like South African countries which are able to offer VFC tobacco to U.K. at competitive prices. The response to the Commission's Questionnaire, referred to above, highlights the need for rationalising the cost structure of tobacco cultivation with a view to encouraging the exports of inferior and filler tobaccos for which there is an international demand as also for further promoting exports of VFC tobacco.

Part V
PEPPER
SECTION I
EXPORTS

Trend of exports

14.1 Exports of pepper from India have varied between 17.20 million kg (1960-61) to 26.31 million kg (1965-66) in terms of quantity and between Rs. 5.89 crores (1963-64) to Rs. 16.19 crores (1969-70) in terms of value during the period 1960-61 to 1972-73, as will be seen from the following table :

TABLE 14.1—Exports of pepper from India—1960-61 to 1972-73*

Year					(Quantity) (million kg)	Value† (Rs. crores)
1960-61	..	..	..	..	17.20	8.50
1961-62	.			..	21.62	8.08
1962-63	..	..	..	..	20.87	6.57
1963-64	..	..	..	..	18.94	5.89
1964-65	..	..	..	..	17.38	6.79
1965-66	..	..	..	..	26.31	11.10
1966-67	..	..	..	..	21.79	11.83
1967-68	..	..	..	..	25.06	13.10
1968-69	..	..	..	..	18.95	9.72
1969-70	..	..	..	..	22.30	16.19
1970-71	..	..	..	..	17.97	15.25
1971-72	..	..	..	..	19.25	14.83
1972-73	..	..	..	..	19.96	14.31

Appendix VI gives the total imports of pepper by various countries and the corresponding exports‡ from India during the calendar years 1966 to 1972. It will be seen that exports from India accounted for 20 per cent of the annual average world imports

*Source—Monthly Statistics of Foreign Trade op. cit.

†Vide footnote on page 4.

‡Vide footnote on page 5

during these years. During the individual years in this period, this share has ranged from 14.9 per cent (1971) to 31.4 per cent (1966).

14.2 Though India exports pepper to a large number of countries, the off-take of only a few of them is significant in the context of their total imports. These countries are USSR, Poland, Czechoslovakia, UAR, Italy, Canada and USA, as is apparent from the table below:

TABLE 14.2—*Percentage share of pepper of Indian origin in the imports made by selected countries—1966 to 1972*

Year			USSR	Poland	Czechoslovakia	UAR	Italy	Canada	USA
1966	..	..	93	90	100	@	79	87	31
1967	..	..	86	@	@	75	71	60	4
1968	..	..	@	94	87	98	69	55	4
1969	..	..	64	@	100	86	55	52	7
1970	..	..	86	61	63	@	33	34	20
1971	..	..	98	73	@	61	25	39	7
1972	..	..	81	100	73	@	34	55	6
Average annual exports from India (million kg)			8.36	1.25	0.98	0.51	1.41	1.09	2.41

It will be seen that India accounted for the entire imports of pepper made by USSR, Poland and Czechoslovakia as also UAR, in certain years, whereas in the case of Italy and Canada also, India has been catering to a substantial part of their requirements

14.3 There is a group of other countries which though they are major importers of pepper, lift only a very nominal quantity from India. These countries are Singapore, Germany (FR), France, U.K., Morocco, Japan, Australia and Netherlands. The following table gives the annual average imports of pepper by

@Exports from India for the calendar year, which have been compiled on the basis of the data published by Department of Commercial Intelligence & Statistics, are in excess of imports into the country, which have been obtained from FAO sources.

these countries during the period 1966 to 1972, and India's contribution to this trade:

TABLE 14.3—*Average imports of pepper by selected countries during 1966 to 1972 and India's share therein.*

Country				Average imports* (thousand kg)	India's share Absolute† (thousand kg)	Per cent
1. Singapore	..	..	..	22,066	55	0.25
2. Germany (FR)	..	..	..	6,241	64	1.03
3. France	..	..	..	3,403	18	0.53
4. United Kingdom	..	..	..	3,238	35	1.08
5. Japan	..	..	..	2,353	31	1.32
6. Morocco	..	..	..	1,635	22	1.35
7. Netherlands	..	..	..	920	6	0.65
8. Australia	..	..	..	917	33	3.60

These countries apparently get their supplies from India's competitors, namely, Indonesia, Sarawak and Brazil.

Long-term outlook

14.4 Estimates of future exports of pepper from India as worked out by different organisations are presented in the following table:

TABLE 14.4—*Estimates of export potential of pepper from India*
(million kg)

Year				Directorate of Arecanut & Spices Development	Marketing Research Corporation of India	Spices Export Promotion Council
1975	..	..	..	31	36	23
1980	..	..	..	34	..	25†
1985	..	..	..	37	..	..
2000 A.D.	..	..	..	48	..	..

†Relates to 1978-79.

*Source—Worked out on the basis of data supplied by the FAO.

†Monthly Statistics of Foreign trade op. cit.

The projections of export worked out by the Spices Export Promotion Council are even lower than levels of actual exports already realised in 1965-66 and 1967-68. The Marketing Research Corporation of India's estimate of 36 million kg for 1975 is based on a "Survey of India's Export Potential of Spices" conducted in 1968. An important conclusion of this Survey was that the enforcement of quality control measures in regard to the important export varieties like Malabar bold and extrabold needed to be improved.



SECTION II

INTERNAL CONSUMPTION

15.1 No systematic attempt has so far been made to assess the internal demand for pepper though on rough estimates it is put at around 8 to 10 million kg. The per capita consumption of pepper works out to below 20 gm per annum which is very low as compared to that in other major consuming countries. For instance, the per capita consumption of pepper is 100 gm in USA, 60 gm in Italy, 56 gm in U.K. and 50 gm in USSR. Apart from eating habits, the internal demand is low on account of the production constraint and the consequent high prices. The internal demand is however likely to go up with the increase in population and rising standards of living.



SECTION III

PRODUCTION

16.1 Production of pepper has declined by 23.7 per cent i.e. from 34.2 million kg in 1960-61 to 26.1 million kg in 1972-73, as against an acreage shrinkage of about 3.5 per cent—from 123,100 hectares in 1960-61 to 118,800 hectares in 1972-73. This is evident from the following table :

TABLE 16.1—Area, production and yield of pepper*

Year					Area ('000 hectare)	Production (million kg)	Yield (kg per hectare)
1960-61	..	..	..	..	123.1	34.2	278
1961-62	..	..	..	..	123.1	34.2	278
1962-63	..	..	..	..	122.5	31.4	256
1963-64	..	..	..	..	122.5	28.9	236
1964-65	..	..	..	..	123.2	29.1	236
1965-66	..	..	..	..	122.6	27.8	226
1966-67	..	..	..	..	122.8	27.6	225
1967-68	..	..	..	..	122.2	26.4	216
1968-69	..	..	..	..	121.2	25.7	212
1969-70	..	..	..	..	120.4	25.5	212
1970-71	..	..	..	..	120.0	26.2	218
1971-72	..	..	..	..	118.6	26.2	221
1972-73	..	..	..	..	118.8	26.1	220

16.2 Production of pepper in India is mainly concentrated in the State of Kerala, which accounts for more than 95 per cent of the all-India production. Karnataka, Tamil Nadu and Pondicherry share the balance of 5 per cent. The yield rate of pepper in India is very low (except for the Panniyur hybrid) compared to that in other countries, namely, Indonesia and Brazil. The average yield per vine in Kerala is reported to be about 2 kg whereas in Indonesia it is as much as 8 kg. This marked diff-

*Source—Directorate of Economics & Statistics, Ministry of Agriculture. These estimates have been worked backwards from 1972-73 on the basis of all-India index numbers of area and production—1959-60 to 1972-73 (Revised Series) released by the Directorate of Economics & Statistics.

erence in yield rates may be the cumulative result of genetic characteristics of the varieties, old age of vines and cultivation practices. Further, the per hectare yields differ widely as between different districts in Kerala State, as would be seen from the following table:

TABLE 16.2—*Yield of pepper in different districts of Kerala State—(1968-69)**

Name of the District				Area (hectares)	Production (thousand kg)	Yield per hectare (kg)
Cannanore	..	..	..	42,890	6,005	140
Kozhikode	..	..	..	15,989	2,178	136
Kottayam	..	..	..	14,448	4,361	320
Trivandrum	..	..	..	8,429	3,063	363
Ernakulam	..	..	..	6,807	1,886	277
Quilon	..	..	..	4,764	1,811	380
Palghat	..	..	..	3,480	517	149
Alleppey	..	..	..	1,275	290	222
Trichur	..	..	..	745	326	438
STATE	..	..	..	98,827	20,427	207

It will be noticed that yields are the lowest in Cannanore and Kozhikode districts which together account for more than half of the total area under pepper in the State. In Trichur district on the other hand where area under pepper is the lowest in the State, yield is the highest.

*Source—IIIT², Working Document op. cit.

SECTION IV

APPROACH

17.1 There is need to formulate a long-term plan of pepper development to meet the rising demand both for export as also internal consumption. The plan should concentrate on evolving those varieties of pepper which are in demand in the foreign markets. Further, it is also essential to identify the factors which have been responsible for causing a decline in the production levels of pepper during the last decade.

Development aspects

17.2 Development of pepper has been given increasing attention under the successive Five Year Plans. New plantations, package of improved practices and production and distribution of rooted cuttings are the important measures which have been taken up. During the Fourth Plan period emphasis was laid on cultivation of high-yielding varieties. Centrally sponsored schemes relating to multiplication of improved planting materials especially hybrid Panniyur-I and demonstration of measures for control of pests and diseases are being implemented in the major pepper growing States. A Central Nursery for rapid multiplication of planting material of the hybrid pepper is functioning in Kerala. Besides, five regional nurseries have also been established in the State. At present nearly one lakh rooted cuttings are being distributed from the Central Nursery every year. It is expected that nearly 150 lakh cuttings would be available for distribution by the end of Fifth Plan period. The Commission would urge a study of the impact of this programme with particular reference to the number of farmers to whom such cuttings are being distributed along with the locations as also yield estimates of each of such vines every year. Further, it is reported that at present the cultivators are also distributing cuttings from their own vines. It would be useful to examine if any propaganda or support is needed for this natural spread.

17.3 Research work on pepper has hitherto been of an isolated nature focussed on selection and evolution of new strains.

One significant result of the research effort is the evolution of hybrid Panniyur-I in Kerala which has been released for commercial cultivation. This variety is found to be high yielding and early maturing. It compares with the local popular variety of pepper as under:

TABLE 17.1—*Comparison of characteristics of hybrid Panniyur-I and Kalluvally variety of pepper**

		Panniyur-I	Kalluvally (local popular variety)
Maximum yield per vine	..	10.5 kg (green)	5.59 kg
Minimum yield per vine	..	5.325 kg (green)	0.931 kg (green)
Mean yield per vine	..	7.331 kg (green)	1.751 kg (green)
Mean length of spike	..	16.2 cm	10.8 cm.
Mean number of berries per spike	..	98	65
Weight of 100 green berries	..	16.8 gm.	12.4 gm.
Percentage of driage	..	32.8	31.4

With a view to exploring the possibilities of increasing production and thereby raising net returns to the cultivators through the use of this hybrid, a number of demonstration plots have already been laid in the States of Kerala, Karnataka and Tamil Nadu. This hybrid is claimed to have four-fold yield compared to the existing varieties. In spite of the extension efforts, there is general unawareness of the possibilities of increasing profitability of the crop by planting this hybrid.

17.4 The Commission has examined this question in some depth. It appears that the programme for popularisation of hybrid Panniyur-I received a setback initially on account of certain doubts which were raised about its quality aspect. The Indian Institute of Foreign Trade reported in 1969, that in view of the lower pungency of this variety it might not have acceptance in the export markets which preferred more pungent varieties. It is, however, reported by the Directorate of Arecanut and Spices Development that what is important in judging the quality aspects of hybrid pepper is the non-volatile ether extract, which is much greater in this hybrid compared to that in Malabar and Tellicherry black pepper varieties. The Commission has also been told that this hybrid

*Source—Directorate of Arecanut and Spices Development, Calicut.

pepper has stood the quality tests in the context of the Commonwealth standards also. Moreover, quality analysis of Panniyur-I conducted at the Central Food Technological Research Institute, Mysore, has shown that this variety is a very good quality pepper and in several respects compares favourably with other popular varieties which are being exported from the country. Comparative data on important quality factors are given below:

TABLE 17.2—*Important quality factors of different varieties of pepper**

				(Per cent)		
				Panniyur-I	Malabar Black	Tellicherry Black
Volatile ether extract	..	..	..	1.84	2.32	1.02
Non-volatile ether extract	..	..	..	13.52	8.53	7.00
Alcohol extract	..	..	..	13.38	9.88	8.28
Total ash	..	..	..	4.45	4.83	4.35
Acid insoluble ash	..	..	..	0.11	0.03	0.07

The greater the percentage of the first three constituents and the lesser the percentage of the last two, the better the pepper will be. This shows that the stand taken by the Indian Institute of Foreign Trade has been partly responsible for the slow progress of popularising this hybrid. Now that it has been established that the variety is not only high yielding but is also suitable for export from the quality angle, the Commission would recommend that the programme for popularisation of Panniyur-I should be given high priority.

17.5 The Commission is given to understand that the Indian Council of Agricultural Research (ICAR) has recently sanctioned a Coordinated Research Project for Spices. This could go a long way in testing and evolving high yielding varieties of pepper other than Panniyur-I. The Commission would recommend that, to start with, a few foreign hybrids of pepper should be selected for field trials in consultation with the Ministry of Commerce. In this process, apart from the yield rate and cost of cultivation, their quality acceptability in export markets should also be kept in view.

* Directorate of Arecanut and Spices Development, Calicut.

17.6 Pepper crop is subject to attack by a number of pests and diseases; the more important being wilt disease affecting the vines and the pollu beetle damaging the berries. Although no proper studies have been carried out regarding the magnitude of losses due to these diseases, roughly 10 to 15 per cent of the vines and 15 to 20 per cent of the crop are estimated to be lost every year due to wilt disease and pollu beetle respectively. It is reported that even Panniyur-I is not immune to wilt disease though it is more tolerant. A demonstration scheme to educate the farmers in the control of this disease was taken up during the Fourth Plan period with a limited annual target of 400 hectares but it was possible to cover only a few selected areas by the demonstrations. As large areas have not yet been covered, the proposal is to continue this scheme during the Fifth Plan period with a higher target of 4800 hectares to be achieved by the end of 1978-79. Also, with a view to inducing the farmers to take up plant protection measures increasingly, a scheme to supply the plant protection chemicals and equipment to the pepper growers at 25 per cent subsidy is being contemplated with a coverage of 40,000 hectares. It has been brought to the notice of the Commission that a suitable plan of action for eradication of wilt disease is already under consideration in the Ministry of Agriculture in consultation with the concerned States. The Commission attaches great importance to this programme and urges that this should be expeditiously taken up.

Expansion of area

17.7 The scope for expansion of area under pepper is very limited in Kerala. There is, however, considerable room for expanding the area under pepper cultivation in the non-traditional areas in the States of Karnataka, Tamil Nadu and Andhra Pradesh and possibly the southern hill areas of Maharashtra. The Andhra Pradesh Forest Department has been able to demonstrate successfully that pepper could be grown in coffee plantations in East Godavari district. Though the rainfall in this area is low compared to that in the traditional pepper growing areas, the crop is coming up very satisfactorily in this region. As regards purity and quality, the tests carried out at the Pepper Research Station, Taliparemba and Central Food Technological Research Institute, Mysore have established that the pepper grown in this area compares well with that grown in traditional pepper growing areas. Initially, the planting material was obtained from

Kerala but now they have started growing their own planting material. Special varieties like Panniyur-Hybrid are, however, obtained from Kerala. Because it is being taken up as a subsidiary crop in coffee plantations, the cost of production is also very low. Apart from the initial expenditure of obtaining the planting material, pitting and planting of vines, the only recurring expenditure is in respect of manuring. As the manuring season for pepper coincides with that of coffee, expenditure on manuring is also reduced. This experiment shows that with a very small extra cost, additional production of pepper can be obtained in the existing coffee plantations.

17.8 Pepper is also grown mixed with other plantation crops like coconut, arecanut, etc. The Directorate of Arecanut and Spices Development has taken up with the Coffee Board the question of encouraging coffee growers to grow pepper under shade trees. Instructions are reported to have been issued by the Coffee Board on this subject. Propaganda for cultivating pepper as a mixed crop with arecanut, coconut, etc. is also being done by the Directorate of Arecanut and Spices Development. The Commission suggests that these activities should be intensified.

Specific area development

17.9 The Commission would particularly like to emphasise the need for concentrating developmental efforts in Cannanore and Kozhikode districts of Kerala which together account for almost 50 per cent of the total areas under pepper in the country. The per hectare yield of pepper in these two districts in 1968-69 was 140 and 136 kg as against the State average of 207 kg. The Commission recommends that the problems of pepper cultivation in these two districts should be studied by the Ministry of Agriculture and special programmes undertaken to augment the yield level of pepper in these districts.

Replantation

17.10 Replantation is another important facet of pepper development. In Kerala many plantations are old and unproductive. Some of the plantations have a very thin stand of crop owing to infestation by pests. It has been reported that replantation with some new high yielding varieties could give a boost to the pepper production in Kerala. The Commission feels that such a programme should be preceded by a survey of the present status of

plantations. Based on the findings of this survey a suitable scheme for replantation could be drawn up. This programme should be supported by proper extension and credit facilities to cover the cost of the replantation and to ensure the application of recommended inputs and improved practices.

Cost of production

17.11 The most important factor which seems to effect India's capacity to export is the high cost of production of pepper in the country. As mentioned earlier, in Kerala which accounts for 95 per cent of pepper production in the country, the per vine yield is only about 2 kg whereas in Indonesia, the per vine yield is 8 kg. So, even though there may be some advantage in labour wages, the difference in the yields more than offsets this advantage. Further, as improved cultural practices have a certain minimum cost per vine, unless the yield per vine is sufficiently high, the grower is not tempted to incur the extra expenditure in the expectation of the percentage increase in the yield. In Kerala pepper is grown mainly in homestead gardens intermixed with several other crops, making reliable estimates of cost of production difficult. Even so, the Marketing Research Corporation of India has estimated the cost of pepper at Rs. 2,063 per hectare from the seventh year when the vines reach economic production, to the fifteenth year of cultivation. This estimate relates to the year 1968. More recently, the Indian Institute of Foreign Trade has estimated the cost of cultivation of pepper (Nadan) at Rs. 2,030 per hectare. The cost of cultivation under reasonable cultural practices being of this order, it is only by greater yield per vine that the Indian pepper can be made to compete in the world market. It is noted that Singapore which is an important re-exporting centre for pepper, is taking very little pepper from India and is obviously making the bulk of its purchase from Indonesia. Indian exports have also been inhibited in the past by too much emphasis on high quality of pepper. It has already been noticed that the world commercial grades are of a much lower quality than Indian pepper and Panniyur-I, the first hybrid introduced which is a reasonable yielder, has still got a quality much higher than the commercial grades required in the various importing countries. The Commission is of the firm opinion that whereas it may be desirable to maintain India's entry in the high quality pepper market, it is equally important to enter the bulk market in a large way so that the overall exports increase. This can only be done by substantially changing

over to new high-yielding varieties which may be of lesser pungency but are still better than the world standards.

17.12 It is claimed that Panniyur-I can give yield comparable to the varieties of Indonesia. This claim is based on the research findings. Now that sufficiently large number of vines of this variety have been introduced in the field, it is desirable that a sampling of yields of the vines is done to estimate the actual yield per vine under field conditions. It will then be possible to work out the scheme for proper cultural practices for the hybrids to get the best value out of the vines. Meanwhile, it is necessary that research workers should introduce new high-yielding varieties which can answer the needs of the bulk markets. It is hoped that the past controversy which inhibited the introduction of Panniyur-I for several years will not be repeated.

17.13 The Commission issued a Questionnaire through the Ministry of Commerce to Indian Embassies and High Commissions in important pepper importing countries, seeking information on the forms in which pepper was generally imported (whether ground or unground, etc.), the extent to which import lots were adulterated and whether suspicion was attached to the quality of imports. The replies indicate that generally Indian pepper meets the quality standards laid down by the importing countries and there is hardly any instance of adulteration of Indian pepper. Evidently, it has not been noticed that the Indian pepper, unadulterated, is of extremely superior quality compared to the quality standards laid down by the importing countries. The Questionnaire also sought information on the price at which imports of black/white pepper of different varieties were affected during the last three years. Very little information is available on this aspect. It is obvious that if the exports of pepper are to be increased, much more detailed information should be available about the qualities popular in the importing markets and the ruling prices as also the sources of supply so that the competition can be planned accordingly. The Commission hopes that the Ministry of Commerce would ensure that Indian Embassies and High Commissions evolve a better system of reporting of prices of commodities and sources of supply in the countries where Indian pepper can find a ready or a competing market.

17.14 The Agmark specifications laid down for pepper are much higher than the foreign market specifications especially in

respect of pungency. This will be evident from the following table:

TABLE 17.3—*Agmark and foreign market specifications of pepper**

			Malabar black pepper (Agmark speci- fications)	U.S. Gov- ernment standard	Canadian Government standards	Common- wealth Food specifi- cations
Volatile ether extract ..	..	2.32%	Not prescribed	Not prescribed	Not prescribed
Non-volatile ether extract	..	8.53%	Not less than 6.75%	Not less than 6%	Not less than 6%	
Alcohol extract	..	9.88%	Not prescribed	Not prescribed	Not less than 8%	
Total ash ..	..	4.83%	Not more than 7%	Not more than 6%	Not more than 7%
acid insoluble ash	..	0.03%	1.5%	0.9%	1.5%	

The foreign market specifications are lower since pepper is generally used as a base for flavouring material or oleoresins rather than as a direct spice. The Commission feels that it would be necessary to give due weight to foreign specifications in the Indian grading system so that production of pepper of lower pungency is encouraged in the country. As efforts are being concentrated on export of pepper, obviously the Agmark specifications should be related to the export specifications. There is, of course, some market for high pungency pepper in the USA and Canada where there is still a tendency to use it for direct consumption, but this requirement is very small and can be met without much difficulty. Because of these small demands, there is not much point in maintaining the internal production mainly based on high pungency pepper. The two main considerations should be yield and quality acceptability for the bulk of the export market.

17.15 As in the case of other spices, pepper is not added as a direct ingredient but is used as a flavouring material in western dishes. For this purpose a spice is often converted into tincture, essential oil or an oleoresin. Oleoresins of pepper are the

*Source—Directorate of Arecanut and Spices Development.

most important of all spice-based oleoresins. An oleoresin is prepared from a spice or herb, by extraction with selected volatile organic solvent after which the extracting medium is completely removed under vacuum for permissible residual solvents. Oleoresin, therefore, differs from the corresponding essential oil, in that a different method of preparation is employed. An oleoresin is thus the product of selected organic solvent extraction of a herb or spice which results in a material containing all the flavour constituents present in the starting material. Their preparation, however, depends on various factors which have to be determined through research and experience. Popular pepper-based oleoresins are: oleoresin black pepper (decolourised), superresin black pepper oleoresin white pepper, fritzbros black pepper (soluble) and fritzbros white pepper (soluble). The Commission would suggest that in view of the demand from certain countries for processed products, the economics and possibility of exporting them should be examined.



PART VI
CARDAMOM
SECTION I
EXPORTS

Trend of exports

18.1 India is the largest single exporter of cardamom followed by Guatemala and Sri Lanka. Exports of Cardamom from India have varied between 1.13 million kg (1965-66) and 2.36 million kg (1961-62). In terms of value, exports have ranged from Rs. 2.67 crores (1962-63) to Rs. 11.22 crores (1970-71). The following table gives the data on exports from year to year:

TABLE 18.1—Exports of cardamom from India—1960-61 to 1972-73@

Year						Quantity (million kg.)	Value ** (Rs. crore)
1960-61*	..	..	..	..	..	2.03	3.67
1961-62*	..	..	..	..	..	2.36	3.59
1962-63*	..	..	..	..	..	2.26	2.67
1963-64*	..	..	..	..	..	2.31	4.20
1964-65	..	..	..	..	..	1.50	2.72
1965-66	..	..	..	..	..	1.13	4.23
1966-67	..	..	..	..	..	1.59	7.96
1967-68	..	..	..	..	..	1.45	7.03
1968-69	..	..	..	..	..	1.29	6.74
1969-70	..	..	..	..	..	1.15	8.93
1970-71	..	..	..	..	..	1.71	11.22
1971-72	..	..	..	..	..	2.15	8.03
1972-73	..	..	..	..	..	1.38	6.84

@Source—Monthly Statistics of Foreign Trade, op. cit.

*Figures of export during these years include big cardamom (about 300 tonnes every year).

**Vide footnote on page 4. Figures for the year 1970-71 to 1972-73 do not tally with the corresponding figures in Table I.1 as these do not include large cardamoms.

18.2 Appendix VII gives the quantities of cardamom exported to 18 selected countries. Five of these countries account for 75 per cent of total exports from India. The percentage share of these countries in the total exports is given in the table below along with the peak and average exports during the period:

TABLE 18.2—*Percentage share of selected countries in total exports of cardamom from India—1966-67 to 1972-73*

Year			Kuwait	Saudi Arabia	USSR	Japan	Bahrain Islands
1966-67	..	..	25	23	7	2	4
1967-68	..	..	37	23	7	2	3
1968-69	..	..	41	22	9	5	3
1969-70	..	..	37	33	6	4	3
1970-71	..	..	34	32	6	5	3
1971-72	..	..	32	30	5	4	4
1972-73	..	..	38	23	10	7	3
Average	..	..	34	27	7	4	3
Peak level exports ('000 kg)			681 (71-72)	643 (71-72)	143 (72-73)	91 (72-73)	93 (71-72)
Average annual exports ('000 kg)			524	408	104	60	49

Kuwait is the major buyer accounting for 34 per cent of exports from India followed by Saudia Arabia which accounts for another 27 per cent. India met 65 per cent and 86 per cent respectively of the total import requirements of Saudi Arabia and Kuwait in 1969.

18.3 There is a group of countries whose offtake from India has declined over the years. Among these, particular mention may be made of Sweden, USA, Federal Republic of Germany, Afghanistan, Finland and Belgium. Some of these markets like Sweden, USA and Germany (FR) are being lost to Guatemala. It is also to be noted that Sri Lanka is a serious competitor in the Saudi Arabia and Jordan markets. The Commission is of the view that the USA and the USSR offer good scope for Indian cardamom and the State Trading Corporation should be entrusted with the task of exploiting these markets. Possibly, Australia will also be able to provide a good market for Indian cardamom.

18.4 Exports of cardamom from India to certain countries like U.K., Bahrain Islands, Singapore and Iran have shown a rising trend in the last few years. However, except in the case of U.K., exports to these countries declined sharply in 1972-73 after reaching a peak level in the previous year.

Long-term outlook

18.5 The Study Team on Cardamom set up by the Commission has estimated that exports of cardamom from India might rise to 3.2 million kg in 1980-81 and 3.7 million kg in 1984-85. The Cardamom Board has indicated that exports of cardamom might rise to around 3 million kg in 1978-79. This is on the assumption that the world consumption of cardamom would increase by 4 per cent per annum during the Fifth Plan period and that India's share in the world trade would remain constant.



SECTION II

INTERNAL CONSUMPTION

19.1 According to the Cardamom Board, internal consumption of cardamom has increased by about 44 per cent during the period 1964-65 to 1971-72, as will be seen from the following table:

TABLE 19.1—*Internal consumption of cardamom during 1964-65 to 1971-72***

('000 kg.)

Year								Internal consumption
1964-65	..	..	..	..	..	..	..	766
1965-66	..	..	..	..	..	..	..	866
1966-67	..	..	..	..	..	..	..	1,100
1967-68	..	..	..	..	..	..	..	949
1968-69	..	..	..	..	..	..	..	809
1969-70	..	..	..	..	..	..	..	1,150
1970-71	..	..	..	..	..	..	..	1,100
1971-72	..	..	..	..	..	..	..	1,190

19.2 At the current level of aggregate consumption of 1.1 million kg per annum, the per capita annual consumption of cardamom works out to less than 2 gm. This is extremely low when compared to the consumption levels obtaining in some other countries.*

19.3 The Commission feels that with rising income levels envisaged in India's successive Five Year Plans, the per capita consumption of cardamom might increase considerably. The Commission's Study Team on Cardamom has estimated that the internal consumption of cardamom would go up to 1.4 million kg in 1980-81 and to 1.7 million kg in 1984-85. To meet the rising demand, it is essential to step up the level of production in the country.

*34 gm in Sweden, 26 gm in Finland, 10 gm in Norway and 7 gm in Denmark. (MRCI, Report—op. cit.)

**Source—Cardamom Industry—Development Programmes for the Fifth Five Year Plan, Cardamom Board.

SECTION III

PRODUCTION

20.1 Data relating to area, production and yield of cardamom are available on forecast basis from 1969-70, while the earlier data were based on ad hoc estimates. The following table gives these estimates for different years :

TABLE 20.1—Area, production and per hectare yield of cardamom*

Year					Area (‘000 hec- tare)	Production (million kg.)	Yield† (kg. per hec- tar)
1960-61	..	..	..	..	56	3	
1961-62	..	..	..	..	55	3	
1962-63	..	..	..	..	56	4	
1963-64	..	..	..	..	57	3	
1964-65	..	..	..	..	55	4	
1965-66	..	..	..	..	57	4	
1966-67	..	..	..	..	75	4	
1967-68	..	..	..	..	73	3	
1968-69	..	..	..	..	75	3	
1969-70	..	..	..	..	74	3	40
1970-71	..	..	..	..	75	3	41
1971-72	..	..	..	..	77	4	45

The annual production of cardamom has thus varied between 3 to 4 million kg.

It is, however, understood that consequent upon the favourable prices since 1965-66 and the extension of the developmental activities of the Cardamom Board, the growers have started giving greater attention to its cultivation.

20.2 Since estimates of yield for the years prior to 1969-70 have not been published by the Directorate of Economics and Statistics, an attempt has been made to derive these estimates on

*Source—Directorate of Economics & Statistics, Ministry of Agriculture.

†Not published prior to 1969-70.

the basis of available data from the State Governments. These estimates indicate that the per hectare yield has declined from around 60 kg in 1960-61 to 27 kg in 1965-66. In subsequent years the yield has varied from 28 kg in 1968-69 to 45 kg in 1971-72. The yield differs considerably from State to State and also from district to district within a State. The yield differentials are more marked within the Kerala State which has the largest acreage under cardamom (61 per cent of all-India area in 1971-72). Kottayam is the biggest cardamom producing district in the country, accounting for 57 per cent of the cardamom area, but the yield in this district is stated to be the lowest, being 19 kg per hectare. The following table gives an idea of the yield differentials in different districts of Kerala State.

TABLE 20.2—Yield rates of cardamom in Kerala (1968-69)*

District	Yield (g. per hec.)					
Cannanore	56
Kottayam	19
Kozhikode	56
Ernakulam	50
Palghat	56
State	22

20.3 The yield differentials are even more marked when compared on plantation basis. A study conducted by the MRCI@ on 17 cardamom plantations during the years 1961-62 to 1966-67 indicates that the highest yield achieved by a plantation was 341 kg per hectare in 1963-64 while the lowest yield was a mere 2 kg per hectare in 1966-67. It has been mentioned that this was due to variations in the types of lands, their location and fertility status, extent of irrigation facilities available and incidence of diseases and pests, particularly 'katte' disease.

20.4 An experiment conducted in Sirsi area during 1954—60 with a view to investigating the relation between mosaic incidence and the age when cardamom plants are infected and the yields of cardamom, showed interesting results. The data thrown up by this experiment showed that the loss in yield of diseased plants ranged from 10 to 68 per cent in the first year, 26 to 92 per cent

@Survey of India's Export Potential of Spices op. cit.

*Source—IIFT's Working Document op. cit.

in the second year and was even higher in the third year. Thus the reduction in yield was directly related to the number of years a plant had been infected. Adequate data on the area affected by Katte disease and the degree of infestation are lacking, with the result that it is difficult to make any precise assessment of the loss due to the disease. The Cardamom Board, however, estimates that Katte disease is a serious menace to the cardamom plantation industry and more than 90 per cent of the plantations are reported to be affected by the disease to varying intensity.

20.5 As the varieties resistant or tolerant to Katte disease have yet to be evolved, main reliance is placed on sanitation measures for controlling the disease. The Cardamom Board took up a "Katte Control and rehabilitation programme of cardamom plantations" in an area of 9710 hectares during the Fourth Plan period. The scheme envisaged marking of diseased plants, destroying and replacing them with the disease-free seedlings raised in nurseries. An area of 9315 hectares is reported to have been covered under this scheme by the end of 1972-73. The total number of diseased plants uprooted during this period was around 26 lakhs. The Fifth Plan proposals contemplate 25 operational units covering an area of about 27,000 hectares.

20.6 Katte seems to develop much more rapidly on aged plants specially those between the twelfth and fifteenth years. Replantation of aged plants, therefore, helps in raising the production. The Cardamom Board launched a cardamom replanting finance scheme in 1969-70 with the objective of providing loan assistance for replanting of uneconomic plantations at the rate of Rs. 3,840 per hectare in three annual instalments [Rs. 1,800 in the first year, Rs. 960 in the second year and the balance in the third year]. The scheme was, however, taken up on a small scale and till 1972-73, loans were advanced for replantation of 450 hectares only. The scheme is proposed to be continued in the Fifth Plan period with an enhanced annual target of 810 hectares. The Cardamom Board has also been operating a hire purchase scheme since 1968-69 primarily with a view to providing facilities for purchase of artificial sprinklers and other specialised agricultural implements. The response to this scheme till 1971-72 continued to be unsatisfactory and no amount was utilised for the purchase of sprinkler units. In order to make the scheme more popular among the cardamom planters the conditions regarding grant of hire purchase facilities are reported to have now been liberalised.

SECTION IV

APPROACH

21.1 While the long term demand for cardamom, both for internal consumption and export, is likely to expand considerably, no serious attempts have yet been made for the development of this crop. According to the Cardamom Board, it is not difficult to obtain an average yield of about 125 kg per hectare with improved cultural practices; the present annual yield being about 45 kg per hectare only.

Control of Katte disease

21.2 As already stated, one of the important factors responsible for the decline in the yield of cardamom is the widespread occurrence of Katte disease. It is, therefore, imperative that for a meaningful programme of development the Cardamom Board should undertake a survey of the cardamom plantations so as to assess the area affected with this disease. The programme for Katte disease control should aim at uprooting all diseased plants.

Replantations

21.3 The Commission is of the view that the programme for replantation of area under cardamom drawn up by the Cardamom Board has been far from adequate. The total life span of a cardamom plant is about 15 years with a bearing period of 12 years. This would necessitate annual replantation target of 5,500 hectares. Against this, the maximum area replanted in any particular year so far is reported to have been 195 hectares, and the target proposed for the Fifth Five Year Plan is 810 hectares only. The Commission recommends that the coverage under replantation programme should be stepped up substantially.

Problems of small holdings

21.4 Small holdings and unsatisfactory system of land tenure have also largely contributed to the poor yield of cardamom. According to the MRCI* in 1947, of the total area under cardamom, only 3.7 per cent in Karnataka and 3.8 per cent in Kerala was contributed by holdings below 2 hectares. Later surveys indicated that the pattern of land holding had shifted considerably and

*Survey of India's export potential of spices op cit.

the extent of area under small holding had gone up. In 1963, for instance, in the important cardamom growing districts of Kottayam in Kerala and Coorg and Hassan in Karnataka, holdings of less than 2 hectare size accounted for 38, 25 and 23 per cent respectively of the total area under the crop. It is estimated that at present nearly 60 per cent of the area under cardamom is comprised of small holdings.

21.5 A large number of small holders overlook essential operations like plant protection, systematic application of fertilisers, etc. due to poor extension advice and lack of adequate financial resources. Further, most of the cardamom plantations are situated in the interior areas which are not easily accessible. It is also observed that an appreciable extent of area under cardamom is on leasehold lands where due to insecurity of land tenure the planters are reluctant to invest capital on long term development programmes. The Commission recommends that suitable package of practices for adoption by the small farmers needs to be devised. Adequate incentives in the form of credit and input supplies along with extension support would go a long way in augmenting production of cardamom in these holdings.

Expansion of area

21.6 In view of the large potential demand for cardamom in the coming years, the Commission is of the view that there is need to examine the feasibility of bringing more area under cardamom. While cardamom is mostly cultivated as a pure crop, it is occasionally mixed with arecanut, particularly in South Canara district of Karnataka. In this district, arecanut plantations are situated in the high valleys and cardamom and pepper are grown as secondary crops. This system could be adopted with advantage in protected valley locations which have adequate soil moisture.

21.7 There is also scope for growing cardamom in shade in the ever-green forest areas of different States. The State Forest Departments should examine the feasibility of growing cardamom as a catch crop in areas under departmental silvicultural schemes. The Commission recommends that the economics of this programme should be examined by the Cardamom Board in consultation with the State Forest Departments.

Cost of production

21.8 There was an unprecedented decline in prices of cardamom during 1971 consequent on an increase in production. This led to uncertainty in the minds of trading community especially because the situation was made more difficult by the outbreak of hostilities with Pakistan. A scheme to provide warehousing and credit facilities was introduced in Kerala State in November, 1971 to remedy the situation. However, the scheme did not produce the desired impact. The Cardamom Board, therefore, constituted a Sub-Committee to suggest suitable remedial measures. The recommendations made by this Sub-Committee would bear a reiteration and are reproduced below:

- (a) minimum prices should be notified for three groups each of Alleppey Green and Coorg Green Cardamom. (The minimum price to be noticed for each group was also recommended);
- (b) no minimum price need be announced by Government for categories of cardamom like Mixed Green, Bleachable Whites, Bleached Cardamom and cardamom seed;
- (c) the existing grades AGN (Alleppey Green Non Specified) and CGN (Coorg Green Non-Specified) be removed from the approved Agmark grades for purposes of internal marketing;
- (d) no cardamom grown in India should be marketed except through auctions conducted by auctioneers licensed by the Cardamom Board; and
- (e) While it is necessary in principle to notify minimum and maximum prices for exports, the former to avoid mal-practices like under-invoicing and the latter to create confidence on the prices and availability of Indian cardamom in the minds of the importing world community, the issue can be taken up separately.

21.9 The Marketing Research Corporation of India examined in 1968 the cost of production of cardamom in 37 farms, 25 of which were less than 20 hectares and 12 were above 20 hectares

in size. According to this study, the average cost of production per kg worked out as follows:

TABLE 21.1—Average cost of production of cardamom

Size	No. of farms	Average cost of production (Rs. per kg.)
Farms less than 20 hectares	25	19.63
Farms above 20 hectares	12	31.71
Average for all farms	37	25.23

The Corporation concluded on the basis of this study that cardamom cultivation, if scientifically undertaken, is one of the most profitable enterprises currently available. The study, inter-alia, indicated that the volume of exports of Indian cardamom could be significantly raised "without breaking the unit prices too heavily". It was suggested that the unit value may be held at around Rs. 42 per kg which is a fair price for an average estimated cost of production of Rs. 25.23 per kg. The Commission recommends that the Cardamom Board should undertake a fresh study with a view to updating the 1968 estimates of MRCI and assessing the extent of further possible economy in the cost of production.

Export promotion

21.10 There is good scope for increasing exports of cardamom to the Middle East and West European countries and the U.S.A. It is necessary to organise an extensive publicity, including distribution of free samples, in these markets with a view to meeting the growing competition from Guatemala.

21.11 It is reported that Alleppey Green cardamom has a good market in the Middle East countries and the denser cardamom of Karnataka origin is popular in the Scandinavian countries. The denser Indian variety weighs upto 350 gm per litre whereas cardamom of Guatemala origin has a higher density going upto 500 gm per litre. Efforts should be made to evolve denser varieties for export to the Scandinavian countries. For this purpose, it is essential to strengthen the research and extension wing of the Cardamom Board with adequate field and laboratory facilities.

21.12 In the Arab countries cardamom is used for preparation of cardamom coffee. The recent trend has, however, been to lower the content of cardamom in coffee from 50 per cent to below 10 per cent. The demand for cardamom on this account is, therefore, likely to go down. Since these countries provide a potential market for Indian cardamom, it would be necessary to undertake a massive publicity programme to popularise new uses of cardamom as flavouring material.

21.13 There is a good demand for volatile oil of cardamom from countries like France, provided regular supplies at pre-determined prices could be ensured. Nearly half of the 600,000 kg of Indian cardamom, which finds its way to Europe, is distilled for oil. If distillation to required specifications is done at the Indian plantations, there could be a good scope for developing export of cardamom oil from India. The Commission feels that before entering this new line of export it would be essential to find out the actual specifications of the oil which are in demand in these foreign markets. A start could be made only after ensuring supply of the required quantities of cardamom oil on a fairly long term basis at competitive prices.

21.14 Apart from volatile oil, there are possibilities of processing cardamom into flavouring material. As mentioned in the case of pepper, spices are not used as a direct ingredient but in the form of flavouring material in western dishes. The Commission would suggest that if the economics of manufacturing processed products of cardamom is favourable, the countries to which these products could be exported should be identified.

PART VII ACKNOWLEDGEMENTS

22.1 The Commission takes this opportunity to thank the members of the Working Group on Export Oriented Agricultural Commodities, officers of the Ministries of Agriculture and Commerce, ICAR, Tea Board, Coffee Board, Indian Institute of Foreign Trade, Cardamom Board, Directorates of Development concerning Tobacco and Spices, Export Promotion Councils and other producer interests for their valuable suggestions either through correspondence or during personal discussions. Our special thanks are due to the United Planters' Association of Southern India for their valuable contribution, particularly with regard to problems of longterm development of tea industry in the country

22.2 The Commission also wishes to place on record its appreciation of the valuable work done by Shri Sada Nand, Joint Director, in analysing the problems and preparing the material for the Report. Shri M. L. Manrai, Deputy Director and Shri D. S. Bhatnagar, Assistant Director put in hard and conscientious work in analysing the relevant material. Shri J. S. Oberoi, Senior Technical Assistant and Shri K. P. Sharma, Technical Assistant were responsible for the statistical part of the Report.


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Sd/- S. K. Mukherjee
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Member
Sd/- T.A. Pal
Sd/- N. K. Panikkar

Sd/- D. P. Singh
Sd/- M.S. Swaminathan
Sd/- Triloki Singh

NEW DELHI
March 23, 1974

APPENDIX I

COMPOSITION OF THE WORKING GROUP ON EXPORT ORIENTED AGRICULTURAL COMMODITIES

- | | |
|--|----------|
| 1. Shri B. Sivaraman,
Vice-Chairman,
National Commission on Agriculture. | Chairman |
| 2. Dr. A. M. Khusro, Director,
Institute of Economic Growth,
University Enclave,
Delhi. | Member |
| 3. Shri M. K. Mukharji,
Joint Secretary (Credit),
Ministry of Agriculture,
Krishi Bhavan,
New Delhi. | " |
| 4. Shri B. D. Kumar,
Joint Secretary,
Ministry of Commerce,
Udyog Bhavan,
New Delhi. | " |
| 5. Smt. S. L. Singla,
Joint Secretary,
Finance Department,
Government of Gujarat,
Sachivalaya,
Gandhinagar. | " |
| 6. Shri V. P. Sawhney,
Director,
Ministry of Commerce,
Udyog Bhavan,
New Delhi. | " |
| 7. Shri L. N. Saklani,
Director,
Ministry of Commerce,
Udyog Bhavan,
New Delhi. | " |
| 8. Dr. Man Mohan Singh,
Chief Economic Adviser,
Ministry of Finance,
New Delhi. | " |
| 9. Shri N. S. Maini,
Joint Commissioner (Commercial Crops)
Ministry of Agriculture,
Krishi Bhavan,
New Delhi. | " |



APPENDIX I—contd.

- | | |
|--|----------|
| 10. Shri Ram Saran,
Economic & Statistical Adviser
Ministry of Agriculture,
Krishi Bhavan,
New Delhi. | Member |
| 11. Prof. G. R. Kulkarni,
Director General,
Indian Institute of Foreign Trade,
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(Represented by Shri N. V. Rangaswamy, Deputy Chief). | " |
| 12. Dr. Jai Krishna/Dr. D. K. Ghosh,
Chief Economist,
State Trading Corporation,
Chandra Lok,
New Delhi. | " |
| 13. Dr. A. D. Moddie,
Resident Director,
Hindustan Levers Ltd.,
Express Building,
New Delhi. | " |
| 14. Shri B. D. Kanoria,
Chairman,
Indian Jute Mills Association,
Royal Exchange,
6, Netaji Subhash Road,
Calcutta. | " |
| 15. Dr. M. K. Raju,
India Pistons Ltd.,
Huzur Gardens,
Madras. | |
| 16. Shri K. Kasturi,
Senior Economist,
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New Delhi. | |
| 17. Shri Sada Nand,
Joint Director,
National Commission on Agriculture. | Convenor |



APPENDIX II
IMPORTS OF TEA BY SELECTED IMPORTING COUNTRIES AND INDIA'S SHARE IN
THEIR IMPORTS DURING 1966 TO 1972.

Country	1966				1967			
	Total Imports		India's share		Total Imports		India's share	
	1	2	3	4	5	6	7	
			Absolute	Per cent		Absolute	Per cent	
1. U.K.	..	2,32,760	87,243	37.48	2,47,234	1,16,142	46.98	
2. U.S.A.	..	60,325	7,346	12.18	64,726	8,211	12.69	
3. U.S.S.R.	..	21,300	16,943	79.54	23,104	20,079	86.92	
4. Netherlands	..	10,562	2,440	24.07	38,376	3,573	9.25	
5. Australia	..	30,530	5,282	17.31	28,599	5,774	19.99	
6. Canada	..	20,506	4,112	19.97	21,662	3,879	17.91	
7. U.A.R.	..	28,664	18,831	65.68	32,083	16,370	51.02	
8. Iraq	..	25,132	1,713	6.80	14,685	2,173	14.83	
9. South Africa	..	17,480	6,431	33.38	17,258	7,898	45.77	
10. Sudan	..	12,047	..	..	9,830	..	..
11. Morocco	..	10,830	..	..	12,844	..	..
12. Afghanistan	..	11,781	6,729	57.16	7,459	5,064	67.49	
13. Ireland (Irish Rep.)	..	19,364	4,973	25.68	10,761	6,264	58.19	
14. Japan	..	8,612	131	1.52	5,454	282	5.17	
15. Chile	..	8,021	66	0.82	8,060	67	0.83	
16. Germany F.R.	..	7,898	1,243	15.73	8,112	2,132	26.28	
17. Libya	..	4,914	..	..	6,027	1,781	29.55	
18. Poland	..	7,741	2,057	26.57	7,309	..	..
19. Hong Kong	..	6,651	13	0.18	6,764	..	..
20. New Zealand	..	8,294	569	6.86	8,025	423	5.27	
21. Iran	..	6,457	1,773	27.46	6,469	2,003	30.95	
22. Saudi Arabia	..	6,092	78	1.28	4,199	22	0.52	
23. Syria	..	4,006	..	..	3,787	52	1.37	
24. Kuwait	..	4,503	621	13.78	3,637	168	4.62	
WORLD TOTAL	..	6,30,943	1,79,205	28.40	6,85,789	2,13,676	31.16	

(Thousand kg)

APPENDIX II—contd.

Country	1968			1969		
	Total Imports		India's share	Total Imports		India's share
	Absolute	Percentage	Absolute	Absolute	Percentage	Absolute
1	8	10	9	11	13	13
1. U.K.	2,69,640	37.84	1,02,030	2,12,187	59,883	28.23
2. U.S.A.	70,568	12.21	8,616	63,487	7,690	12.10
3. U.S.S.R.	33,700	98.54	22,369	28,000	24,996	89.27
4. Netherlands	32,822	10.47	3,438	29,188	2,594	8.20
5. Australia	27,627	24.00	6,630	30,464	3,900	12.80
6. Canada	23,011	17.64	4,069	22,436	3,195	14.24
7. U.A.R.	14,536	61.54	8,946	24,900	14,260	57.27
8. Iraq	18,159	37.30	6,773	22,997	4,423	19.23
9. South Africa	19,058	..	..	19,686	..	..
10. Sudan	18,444	78.87	10,534	10,010	7,358	73.51
11. Morocco	15,496	0.51	79	17,440	909	5.21
12. Afghanistan	11,883	79.63	9,224	15,400	13,488	87.52
13. Ireland (Irish Rep.)	19,173	52.08	6,868	11,166	4,624	41.45
14. Japan	5,279	9.78	515	11,609	713	6.13
15. Chile	8,604	0.96	83	11,360	76	0.67
16. Germany F.R.	8,979	43.84	3,936	9,205	3,007	32.67
17. Libya	8,484	0.03	2	10,193	8	0.08
18. Poland	6,525	28.86	1,883	8,451	1,969	23.30
19. Hong Kong	7,684	0.05	4	8,943	..	..
20. New Zealand	7,179	7.91	568	8,367	221	2.64
21. Iran	6,397	39.67	2,514	6,510	2,007	30.83
22. Saudi Arabia	3,988	2.03	81	6,760	68	1.01
23. Syria	3,739	..	..	6,609	45	0.68
24. Kuwait	2,926	8.27	242	6,265	308	4.98
WORLD TOTAL	7,13,021	29.23	2,08,440	7,02,333	1,68,709	24.02

APPENDIX II—*contd.*

Country	1970			1971		
	Total Imports	India's share		Total Imports	India's share	
		Absolute	Percent		Absolute	Per cent
1	14	15	16	17	18	19
1. U.K.	2,53,725	95,582	37.82	2,26,289	62,613	27.67
2. U.S.A.	62,331	7,083	11.30	79,584	9,192	11.55
3. U.S.S.R.	29,200	280,414	96.04	43,600	42,499	99.76
4. Netherlands	25,718	2,641	10.27	40,669	2,334	5.83
5. Australia	26,958	3,684	13.67	27,338	3,076	11.25
6. Canada	20,716	3,184	15.42	23,622	3,856	16.82
7. U.A.R.	29,844	11,586	38.82	11,002	8,698	79.01
8. Iraq	19,490	843	4.33	19,877	6,932	34.87
9. South Africa	17,381	..	..	18,975	..	..
10. Sudan	19,388	11,848	61.11	14,415	13,137	91.18
11. Morocco	14,313	812	5.71	12,865	1,260	9.80
12. Afghanistan	18,000	10,732	59.65	16,400	15,474	94.35
13. Ireland (Irish Rep.)	11,282	4,902	42.98	12,051	6,992	58.72
14. Japan	15,553	807	5.19	14,083	1,097	7.78
15. Chile	10,500	36	0.34	8,800	125	1.48
16. Germany F.R.	9,255	8,235	88.95	9,769	3,565	36.49
17. Libya	5,455	9	0.11	10,665	27	0.25
18. Poland	8,097	1,899	23.45	9,712	3,869	39.69
19. Hong Kong	8,430	..	..	8,829	7	0.08
20. New Zealand	7,638	285	3.73	6,800	331	4.87
21. Iran	6,200	2,263	36.60	7,300	3,309	45.33
22. Saudi Arabia	5,617	63	1.12	5,600	77	1.38
23. Syria	7,316	..	..	2,435	..	..
24. Kuwait	6,868	235	4.01	2,335	251	10.75
WORLD TOTAL	7,38,634	2,00,155	27.10	7,42,904	1,99,563	26.86

APPENDIX II—concl'd.

Country	1972			Average during 1966 to 1972		
	Total Imports	India's share		Total Imports	India's share	
		Absolute	Per cent		Absolute	Per cent
1	20	21	22	23	24	25
1. U.K.	2,36,149	84,036	35.59
2. U.S.A.	67,091	7,855	11.71
3. U.S.S.R.	30,629	27,938	91.21
4. Netherlands	30,258	4,129	13.65
5. Australia	28,639	4,488	15.67
6. Canada	22,268	3,591	16.13
7. U.A.R.	22,115	13,124	59.34
8. Iraq	20,424	4,080	19.98
9. South Africa	18,683	..	..
10. Sudan	13,868	10,220	73.69
11. Morocco	13,637	437	3.20
12. Afghanistan	12,542	9,982	77.73
13. Ireland (Irish Rep.)	11,752	5,640	47.99
14. Japan	11,080	656	5.92

15. Chile	..	..	12,000	81	0.68	9,619	76	0.79
16. Germany, F.R.	..	..	10,000	4,958	49.58	9,031	3,154	34.92
17. Libya	..	..	11,000	5	0.05	8,534	7	0.08
18. Poland	..	..	10,164	6,611	65.04	8,286	2,796	33.74
19. Hong Kong	..	..	7,858	19	0.24	7,878	6	0.08
20. New Zealand	..	..	7,300	335	4.59	7,666	390	5.09
21. Iran	..	..	7,500	3,349	44.65	6,539	2,460	37.62
22. Saudi Arabia	..	..	5,600	171	3.05	5,409	80	1.48
23. Syria	..	..	4,000	..	..	4,565	14	0.31
24. Kuwait	..	..	2,900	819	28.24	4,045	378	9.34
WORLD TOTAL	..	..	7,39,144	2,11,037	28.55	7,07,545	1,97,255	27.88

NOTE:—In the Appendices II, III, IV, VI and VII, data on imports into various countries have been obtained from the Food and Agriculture Organisation of the United Nations and those on exports from India have been compiled from the Monthly Statistics of Foreign Trade, Vol. I, published by the Department of Commercial Intelligence and Statistics.

APPENDIX III

IMPORTS OF COFFEE BY SELECTED IMPORTING COUNTRIES AND INDIA'S SHARE
IN THEIR IMPORTS DURING 1966 TO 1972

(Thousand kg.)

Country	1966				1967		
	Total Imports	India's share		Total Imports	India's share		
		Absolute	Percent		Absolute	Percent	
1	2	3	4	5	6	7	
1. U.S.A.	13,35,730	2,784	0.21	12,80,703	7,791	0.61	
2. Germany F.R.	2,79,880	943	0.34	2,75,749	718	0.26	
3. France	2,38,200	563	0.25	2,20,112	601	0.27	
4. Italy	1,93,860	875	0.71	1,45,525	533	0.37	
5. Netherlands	85,800	611	0.71	96,055	975	1.03	
6. Sweden	96,730	62	0.06	1,01,467	124	0.13	
7. U.K.	81,590	407	0.50	80,510	1,080	1.36	
8. Canada	71,390	80	0.11	82,488	564	0.68	
9. Belgium	56,990	247	0.61	66,716	412	0.62	
10. Spain	49,160	..	..	46,383	..	..
11. Japan	46,200	6	0.01	40,795	..	..

(Thousand kg.)

12. Denmark	..	..	52,300	5	0.01	52,902	..	..
13. Switzerland	..	..	40,720	92	0.23	36,616	8	0.02
14. Finland	..	..	45,950	..	..	50,219	..	..
15. Germany D.R. ...	..	..	37,420	3,232	8.64	40,253	1,609	3.75
16. U.S.S.R.	..	..	28,300	6,037	21.33	24,700	9,171	37.13
17. Norway	..	..	24,790	488	1.40	35,572	592	1.66
18. Argentina	..	..	37,410	..	..	32,379	..	..
19. Yugoslavia	..	..	24,730	4,422	17.88	30,182	5,210	15.85
20. Algeria	..	..	32,490	..	..	47,200	..	..
21. Poland	..	..	19,540	302	1.55	20,128	1,815	9.02
22. Austria	..	..	17,500	48	0.27	18,820	57	0.30
23. Hong Kong	..	..	29,340	22	0.07	9,509	9	0.09
24. Hungary	..	..	13,500	376	2.79	17,419	507	3.91
25. Australia	..	..	13,990	11	0.08	17,099	290	1.70
WORLD TOTAL	..	..	30,71,200	24,200	0.79	30,40,827	36,017	1.13

APPENDIX III—*contd.*

Country	1968			1969		
	8	India's share		11	India's share	
		Total Imports	Percent		Total Imports	Percent
1						
1. U.S.A.	15,28,010	5,687	0.37	12,16,456	7,070	0.58
2. Germany F.R.	3,00,556	806	0.27	3,09,058	73	0.02
3. France	2,46,163	517	0.21	2,39,903	517	0.22
4. Italy	1,53,305	368	0.24	1,55,876	224	0.14
5. Netherlands	1,03,365	255	0.25	1,19,629	65	0.05
6. Sweden	1,06,038	30	0.03	1,05,986	9	0.01
7. U.K.	91,680	634	0.69	1,02,224	211	0.21
8. Canada	85,909	220	0.26	84,223	121	0.14
9. Belgium	68,521	554	0.08	74,162	93	0.13
10. Spain	54,306	..	..	67,602	..	..
11. Japan	45,379	..	..	59,212	..	..
12. Denmark	56,135	..	..	60,097	..	..
13. Switzerland	44,166	..	..	53,433	55	0.10
14. Finland	48,970	..	..	56,084	..	..
15. Germany D.R.	40,216	3,706	9.22	39,600	4,005	10.11
16. U.S.S.R.	31,400	6,120	19.49	48,000	10,074	20.99
17. Norway	34,861	318	0.92	39,390	60	0.15
18. Argentina	31,285	..	..	44,489	..	..
19. Yugoslavia	29,614	3,120	10.54	39,335	4,357	11.08
20. Algeria	27,055	..	..	20,251	..	..
21. Poland	27,845	2,192	7.87	30,300	2,260	7.46
22. Austria	20,549	131	0.64	22,623	16	0.07
23. Hong Kong	11,058	5	0.05	45,154	6	0.01
24. Hungary	20,505	771	3.76	20,731	955	4.61
25. Australia	16,644	496	2.98	19,451	76	0.39
WORLD TOTAL	34,15,906	28,237	0.82	32,53,549	34,046	1.05

APPENDIX III—contd.

Country	1970			1971		
	Total Imports	India's share		Total Imports	India's share	
		Absolute	Per cent		Absolute	Per cent
1	14	15	16	17	18	19
1. U.S.A.	11,89,385	3,070	0.26	13,10,254	7,449	0.57
2. Germany F.R.	3,10,340	284	0.09	3,23,826	866	0.27
3. France	2,40,384	159	0.07	2,53,940	1,349	0.53
4. Italy	1,64,802	96	0.06	1,77,107	408	0.23
5. Netherlands	1,11,817	249	0.22	1,24,658	212	0.17
6. Sweden	1,06,247	16	0.01	1,01,921	30	0.03
7. U.K.	91,689	286	0.31	1,07,949	582	0.54
8. Canada	77,882	47	0.06	87,390	240	0.27
9. Belgium	62,961	183	0.29	73,029	368	0.49
10. Spain	82,868	..	..	71,842	..	..
11. Japan	81,414	Neg.	Neg.	68,520	..	..
12. Denmark	68,352	47	0.06	58,845	226	0.35
13. Switzerland	61,573	64	0.10	64,099	..	Neg.
14. Finland	79,779	..	..	21,997	8	3.09
15. Germany D.R.	45,364	13,680	8.11	43,771	1,312	25.43
16. U.S.S.R.	41,500	8,113	19.65	43,000	10,934	0.78
17. Norway	38,078	83	0.22	31,538	247	..
18. Argentina	34,268	..	..	33,790	..	11.01
19. Yugoslavia	35,277	5,054	14.33	36,343	4,000	..
20. Algeria	33,000	..	..	22,500	..	..
21. Poland	34,478	11,004	2.91	30,014	..	..
22. Austria	20,555	350	204	25,937	83	0.32
23. Hong Kong	34,124	..	..	16,312	..	..
24. Hungary	26,423	832	2.09	23,135	183	0.79
25. Australia	21,592	499	2.31	22,674	796	3.51
WORLD TOTAL	32,68,189	28,671	0.88	33,85,277	35,062	1.04

APPENDIX III—concl'd.

Country	1972				Average during 1966 to 1972			
	Total Imports	India's share		Percent	Total Imports	India's share		
		Absolute	Percent			Absolute	Percent	
I	20	21	23	25	23	24	25	
1. U.S.A.	12,80,043	7,087	0.56	0.45	13,01,513	5,848	0.45	
2. Germany F.R.	3,41,718	1,681	0.46	0.26	3,05,875	749	0.26	
3. France	2,56,900	1,528	0.59	0.31	2,40,643	749	0.31	
4. Italy	1,76,066	2,595	1.47	0.47	1,66,504	728	0.47	
5. Netherlands	1,33,510	1,643	1.16	0.50	1,10,548	558	0.50	
6. Sweden	1,07,377	704	0.66	0.14	1,03,681	140	0.14	
7. U. K.	1,02,313	1,272	1.24	0.67	93,963	629	0.67	
8. Canada	82,302	854	1.04	0.37	81,655	304	0.37	
9. Belgium	72,241	264	0.37	0.47	67,801	316	0.47	
10. Spain	85,741	..	..	..	65,400	..	..
11. Japan	95,000	Neg.	Neg.	Neg.	62,360	1	Neg.	
12. Denmark	91,827	35	0.04	0.02	61,623	12	0.02	
13. Switzerland	69,459	613	0.88	0.39	52,867	151	0.39	
14. Finland	53,913	..	..	Neg.	50,845	1	Neg.
15. Germany D.R.	45,000	194	0.43	6.05	41,661	2,520	6.05	
16. U.S.S.R.	42,100	17,090	40.59	26.08	37,000	9,648	26.08	
17. Norway	39,451	753	1.91	1.00	36,211	363	1.00	
18. Argentina	38,000	..	..	..	36,017	..	..
19. Yugoslavia	36,000	..	..	11.39	33,112	3,738	11.39
20. Algeria	22,000	..	..	..	29,212	..	..
21. Poland	33,000	1,000	3.03	4.39	27,901	1,925	4.39	
22. Austria	28,156	49	0.17	0.28	22,020	62	0.28	
23. Hong Kong	5,200	..	..	0.03	21,528	6	0.03
24. Hungary	23,000	89	0.39	2.38	20,630	488	2.38	
25. Australia	22,445	1,019	4.54	2.38	19,128	455	2.38	
WORLD TOTAL	34,84,152	42,069	1.21	1.00	32,74,157	32,615	1.00	

APPENDIX IV
IMPORTS OF UNMANUFACTURED TOBACCO BY SELECTED IMPORTING COUNTRIES
AND INDIA'S SHARE IN THEIR IMPORTS DURING 1966 TO 1972

Country	1966			1967			(Thousand kg.)		
	1	2	India's Share		Total Imports	5	India's Share		7
			Absolute	Percent			Absolute	Percent	
1. Germany F.R.	..	1,49,447	..	..	1,51,410	25	..	0.02	..
2. U. K.	..	1,18,883	14,771	12.42	1,26,312	23,636	17.85	..	..
3. U. S. A.	..	1,01,182	..	..	1,19,658	..	..	..	..
4. U. S. S. R.	..	65,200	4,289	6.57	61,000	5,011	8.21	..	..
5. France	..	53,065	349	0.66	55,166	181	0.33	..	..
6. Netherlands	..	44,622	756	1.69	46,812	925	1.98	..	..
7. Spain	..	37,413	..	..	47,379	..	..	..	..
8. Belgium	..	29,768	1,759	5.91	37,315	1,483	3.97	..	..
9. Japan	..	32,081	1,427	4.45	29,610	2,822	9.53	..	..
10. Germany D.R.	..	32,400	2,000	6.17	28,100	2,965	11.48	..	..
11. Italy	..	6,836	..	..	10,309	..	..	..	..
12. Switzerland	..	17,513	133	..	19,766	7	Neg.	..	..
13. Czechoslovakia	..	13,053	..	1.02	17,889	1,190	6.36	..	..
14. Poland	..	13,798	..	..	10,693	35	0.23	..	..
15. Denmark	..	14,730	18	0.13	17,376	32	0.18	..	..
16. Australia	..	12,665	29	0.23	12,237	145	0.18	..	..
17. Sweden	..	12,147	70	0.58	11,076	65	0.59	..	..
18. U.A.R.	..	14,781	520	3.53	13,666	6,609	48.38	..	..
19. Austria	..	12,575	..	..	11,698	..	..	..	..
20. Ireland	..	6,055	..	..	6,012	..	..	..	..
21. Hungary	..	8,067	930	11.53	15,576	945	6.07	..	..
22. Malaysia	..	5,964	920	15.43	5,068	199	3.93	..	..
23. Thailand	..	8,833	..	..	9,309	..	..	..	..
24. Singapore	..	3,634	245	6.74	3,864	833	21.56	..	..
WORLD TOTAL	..	9,38,770	35,610	3.79	10,08,925	55,739	5.52	..	..

APPENDIX IV—*contd.*

Country	1968				1969			
	Total Imports		India's share		Total Imports		India's share	
	8	9	Absolute	Percent	11	12	Absolute	Percent
1				10				13
1. Germany F.R.	1,38,889	20		Neg.	1,54,106	343		0.22
2. U. K.	1,48,899	23,986		16.11	1,38,586	21,598		15.59
3. U.S.A.	1,19,125				1,04,583	9		0.09
4. U.S.S.R.	62,300	5,056		8.04	55,000	10,030		18.24
5. France	22,722	79		0.35	44,230	100		0.22
6. Netherlands	46,190	858		1.86	48,463	895		1.85
7. Spain	47,590				48,926			
8. Belgium	30,172	1,623		5.05	32,728	1,091		3.33
9. Japan	27,253	3,304		12.12	33,085	2,962		8.96
10. Germany D.R.	21,300	1,695		7.96	17,400	1,265		7.27
11. Italy	6,100				17,593			
12. Switzerland	21,430				24,165	1		0.04
13. Czechoslovakia	23,171	410		1.85	18,750	151		0.81
14. Poland	5,114	344		6.73	3,846	350		9.10
15. Denmark	18,467	21		0.11	15,211	3		0.02
16. Australia	9,437	108		1.14	13,242	166		1.25
17. Sweden	10,433				8,816	140		1.59
18. U.A.R.	13,526				14,223	908		6.38
19. Austria	13,973	1,701		12.28	8,411			
20. Ireland	8,106	54		0.67	10,142	1,376		13.57
21. Hungary	12,263	558		4.55	10,313	476		4.62
22. Malaysia	4,197	59		1.41	5,691	87		1.53
23. Thailand	11,648				12,186			
24. Singapore	21,706	1,075		4.95	18,551	1,123		6.06
WORLD TOTAL	10,04,713	52,078		5.18	10,28,739	54,662		5.31

APPENDIX IV—*contd.*

Country	1970			1971		
	Total Imports	India's share		Total Imports	India's share	
		Absolute	Per cent		Absolute	Per cent
1	14	15	16	17	18	19
1. Germany F.R.	1,22,475	20	Neg.	1,54,602	20	0.01
2. U.K.	1,38,448	18,594	14.48	1,21,889	18,434	15.12
3. U.S.A.	99,941	9	0.01	95,102	..	..
4. U.S.S.R.	70,300	6,981	9.93	71,500	17,083	23.86
5. France	63,473	2,025	3.20	76,424	316	0.41
6. Netherlands	64,944	1,257	2.29	57,298	985	1.72
7. Spain	63,679	..	..	69,946	..	..
8. Belgium	32,722	575	1.76	33,388	553	1.66
9. Japan	32,695	2,620	7.64	45,308	3,999	8.83
10. Germany D.R.	15,700	1,493	9.51	19,100	864	4.52
11. Italy	16,764	..	..	16,649	..	..
12. Switzerland	39,297	..	..	29,771	..	..
13. Czechoslovakia	18,084	..	..	17,335	..	..
14. Poland	3,644	..	..	3,096	555	8.20
15. Denmark	16,784	..	..	15,691	23	0.15
16. Australia	14,933	138	1.28	13,490	132	0.98
17. Sweden	13,769	37	0.27	12,145	112	0.92
18. U.A.R.	13,941	891	6.39	15,234	..	..
19. Austria	11,897	..	..	12,093	Neg.	Neg.
20. Ireland	4,536	1,681	37.06	5,305	1,467	27.65
21. Hungary	7,572	201	2.65	7,876	..	..
22. Malaysia	5,964	74	1.24	5,346	52	0.97
23. Thailand	7,884	..	..	13,334	..	..
24. Singapore	5,688	938	16.49	4,723	548	11.60
World Total	10,12,529	47,905	4.73	10,68,206	55,385	5.18

APPENDIX VI—concl'd.

Country	1972				Average during 1966 to 1972			
	Total Imports		India's Share		Total Imports		India's share	
	Absolute	Per cent	Absolute	Per cent	Absolute	Per cent	Absolute	Per cent
1	20	21	22	23	24	25	26	27
1. Germany F.R.	1,45,893	4	Neg.	1,45,274	62	0.04		
2. U. K.	1,35,024	16,181	11.98	1,31,219	19,487	14.83		
3. U.S.A.	1,50,705	18	0.01	1,11,366	5	Neg.		
4. U.S.S.R.	90,300	32,167	35.62	67,942	11,513	16.95		
5. France	81,400	806	0.99	56,640	561	0.69		
6. Netherlands	61,436	761	1.22	51,395	918	1.79		
7. Spain	55,284	..	..	51,369	..	..
8. Belgium	34,892	616	1.77	32,995	1,091	3.31		
9. Japan	60,060	4,445	7.40	37,199	3,068	8.25		
10. Germany D.R.	19,100	..	..	21,596	1,473	6.82		
11. Italy	21,873	..	..	13,731	..	..
12. Switzerland	30,685	..	..	26,075	1	Neg.		
13. Czechoslovakia	18,000	1,696	8.67	17,612	568	3.23		
14. Poland	3,000	..	..	6,156	104	1.69		
15. Denmark	17,063	..	..	16,379	14	0.09		
16. Australia	12,311	85	0.70	12,602	121	0.96		
17. Sweden	15,169	135	0.89	11,936	80	0.67		
18. U.A.R.	16,000	183	1.22	14,339	1,444	10.77		
19. Austria	13,808	..	..	11,894	Neg.	Neg.		
20. Ireland	7,094	1,292	18.21	6,750	839	13.43		
21. Hungary	7,676	1,404	18.29	9,878	644	6.53		
22. Malaysia	8,486	8	0.23	5,103	200	1.89		
23. Thailand	10,960	..	..	19,563	..	..
24. Singapore	4,500	267	5.93	8,953	718	8.02		
WORLD TOTAL	11,90,208	79,684	6.69	10,36,013	64,437	5.25		

APPENDIX V

AGGREGATE DEMAND FOR DIFFERENT TYPES OF TOBACCO

(Million kg dry weight)

Variety	1971		1975		1980		1985		2000	
	Quantity	Percent- age to total	Quantity	Percent- age to total	Quantity	Percent- age to total	Quantity	Percent- age to total	Quantity	Percent- age to total
1	2	3	4	5	6	7	8	9	10	11
V.F.O. ..	43	16.8	58	21.9	75	28.6	100	33.3	165	38.4
Other Cigarette types (Kata, Burley, etc.)	29	11.4	34	13.2	43	14.9	50	16.1	73	17.0
Bidi ..	84	33.9	88	33.3	92	35.6	95	30.6	115	26.7
Chewing ..	61	20.0	45	17.0	40	14.2	35	11.3	43	10.0
Hookah ..	28	11.0	23	8.3	16	6.4	15	4.8	17	4.0
Cigar and Cheroot ..	15.5	6.1	13	4.9	11	3.9	11	3.6	13	3.0
Snuff ..	4.5	1.8	4	1.5	4	1.4	4	1.3	4	0.9
Total ..	355	100.0	265	100.0	283	100.0	310	100.0	439	100.0

See re—Directorate of Tobacco Development, Madras.

APPENDIX VI IMPORTS OF PEPPER BY SELECTED IMPORTING COUNTRIES AND INDIA'S SHARE IN THEIR IMPORTS DURING 1966 TO 1972

Country	1966				1967			
	Total Imports		India's share		Total Imports		India's share	
	Absolute	Per cent	Absolute	Per cent	Absolute	Per cent	Absolute	Per cent
(1)	2	3	4	5	6	7		
1. U.S.A.	17,130	5,308	30.99	25,465	1,101	4.32		
2. Singapore	12,930	1,162	1.25	18,529	67	0.36		
3. U.S.S.R.	8,200	7,053	83.33	9,701	7,071	85.71		
4. Germany F.R.	4,796	8	0.17	6,028	32	0.55		
5. France	3,488	69	1.98	3,666	16	0.44		
6. U.K.	2,849	21	0.74	3,433	92	2.68		
7. Italy	2,419	1,903	78.67	2,612	1,845	70.75		
8. Morocco	2,055	110	5.35	2,819	39	1.39		
9. Japan	1,437	36	2.50	1,679	10	0.60		
10. Canada	1,548	1,349	87.14	2,160	1,398	64.74		
11. Poland	1,036	871	83.71	1,020	1,361	132.45		
12. Czechoslovakia	747	747	100.00	874	840	96.22		
13. Australia	728	24	3.30	880	24	2.73		
14. Netherlands	718	11	1.53	918	13	1.43		
15. Spain	731	166	22.84	1,111	127	11.43		
16. U.A.R.	355	575	163.38	796	600	75.38		
World Total	79,123	24,809	31.42	103,772	20,864	20.11		

(Thousand kg.)

APPENDIX VI—*contd.*

Country	1968				1969			
	Total Imports		India's share		Total Imports		India's share	
	Absolute	Per cent	Absolute	Per cent	Absolute	Per cent	Absolute	Per cent
1	8	9	10	11	12	13	14	15
1. U.S.A.	24,070	1,011	4.20	24,496	1,778	7.26		
2. Singapore	20,280	5	0.02	28,878	58	0.20		
3. U.S.S.R.	10,800	12,587	@@	11,000	7,039	63.98		
4. Germany F.R.	5,972	68	1.14	6,236	30	0.48		
5. France	4,022	4	0.08	4,320	9	0.21		
6. U.K.	2,988	21	0.70	3,562	18	0.51		
7. Italy	2,619	1,819	69.45	2,927	1,618	55.28		
8. Morocco	2,715	5	0.18	929	—	—		
9. Japan	2,185	45	2.06	2,360	69	2.92		
10. Canada	2,316	1,273	54.97	1,741	903	51.87		
11. Poland	1,158	1,084	93.61	1,185	1,208	@@		
12. Czechoslovakia	1,280	1,116	87.19	970	970	100.00		
13. Australia	923	17	1.84	806	32	3.97		
14. Netherlands	717	8	1.12	964	7	0.73		
15. Spain	830	142	17.11	871	45	5.17		
16. U.A.R.	819	800	97.68	875	760	88.71		
World Total	104,374	24,796	23.76	110,363	17,406	15.77		

APPENDIX VI—contd.

Country	1970			1971		
	Total Imports	India's Share		Total Imports	India's share	
		Absolute	Per cent		Absolute	Per cent
(1)	14	15	16	17	18	19
1. U.S.A.	21,915	4,296	19.60	28,165	1,894	6.72
2. Singapore	24,498	3	0.01	25,839	—	—
3. U.S.S.R.	8,300	71.33	85.94	6,900	6,767	98.07
4. Germany F.R.	5,964	261	4.22	7,137	24	0.34
5. France	3,807	8	0.21	4,572	9	0.20
6. U.K.	3,133	17	0.54	2,931	37	1.26
7. Italy	2,498	804	32.91	3,048	755	24.77
8. Morocco	929	—	—	1,000	—	—
9. Japan	2,300	13	0.57	3,008	15	0.50
10. Canada	2,188	760	34.28	2,138	243	39.43
11. Poland	1,295	906	69.96	1,492	1,083	72.59
12. Czechoslovakia	1,350	866	63.41	1,247	1,414	@@
13. Australia	1,043	51	4.89	965	23	2.38
14. Netherlands	924	3	0.32	989	—	—
15. Spain	864	18	2.11	1,072	22	2.05
16. U.A.R.	51	250	@@	205	125	60.98
WORLD TOTAL	99,223	19,658	19.81	113,284	16,903	14.92

APPENDIX VI—*contd.*

Country	1972			Average during 1966-72		
	India's share		Per cent	India's share		Per cent
	Total Imports	Absolute		Total Imports	Absolute	
1	20	21	22	23	24	25
1. U.S.A.	23,980	1,473	6.14	23,603	2,409	10.21
2. Singapore	22,709	90	0.38	22,066	55	0.25
3. U.S.S.R.	11,700	9,418	80.50	9,429	8,363	88.69
4. Germany F.R.	7,566	36	0.48	6,241	64	1.08
5. France	5,098	14	0.27	3,403	18	0.53
6. U.K.	3,768	37	0.98	3,238	35	1.08
7. Italy	3,196	1,097	24.32	2,760	1,405	50.91
8. Morocco	1,000	..	—	1,635	22	1.35
9. Japan	3,500	28	0.80	2,853	31	1.32
10. Canada	2,218	1,210	54.55	2,044	1,088	53.23
11. Poland	1,565	1,531	99.74	1,246	1,246	100.00
12. Czechoslovakia	1,247	913	73.22	1,074	979	91.15
13. Australia	1,072	58	5.41	917	33	3.60
14. Netherlands	1,211	2	0.17	920	6	0.65
15. Spain	1,179	30	2.54	950	77	8.11
16. U.A.R.	300	501	@@	486	514	@@
WORLD TOTAL	115,742	20,695	17.88	103,698	20,740	20.00

@@The figure of export from India for the calendar year, which has been compiled on the basis of the data published by Department of Commercial Intelligence & Statistics, is in excess of the figure of imports into the country, which has been obtained from FAO sources.

APPENDIX VII
EXPORTS OF CARDAMOM (SMALL) FROM INDIA
DURING 1966-67 TO 1972-73 TO SELECTED COUNTRIES*

(Thousand kg.)

Country	1966-67	1967-68	1968-69	1969-70	1970-71	1971-72	1972-73	Average
1	2	3	4	5	6	7	8	9
1. Kuwait	393	537	528	426	577	681	525	524
2. Saudi Arabia	365	328	288	375	537	643	317	408
3. U.S.S.R.	108	98	113	72	99	98	143	104
4. Japan	28	28	59	45	81	85	91	60
5. Bahrain	57	36	37	29	52	93	39	49
6. New Zealand	66	57	11	8	33	14	5	28
7. Iran	28	18	14	14	25	70	12	26
8. Singapore	25	10	11	8	24	39	9	18
9. U.S.A.	22	7	5	2	22	20	10	13
10. U.K.	26	19	16	25	18	22	30	22
11. Afghanistan	32	10	14	16	17	16	6	16
12. Netherlands	20	25	16	10	15	26	19	19
13. Germany (D.R.)	30	24	24	25	14	21	5	20
14. Sweden	117	60	7	3	14	34	10	35
15. Germany (F.R.)	27	11	3	1	5	9	8	9
16. Iraq	18	12	8	12	6	29	12	41
17. Belgium	39	4	1	1	4	3	4	8
18. Denmark	22	11	12	..	2	8	2	8
TOTAL EXPORT	1,590	1,450	1,290	1,149	1,705	2,147	1,384	1,581

*Source—Monthly Statistics of Foreign Trade.