MANAGEMENT OF PLANTATIONS

A STUDY OF RUBBER

BY

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AUTHOR'S NOTE

The book 'Management of Plantations - A Study of Rubber' is the result of the Ph.D. work carried out by the author under the supervision of Prof. (Dr.) M. V. Pylee M.A., D.Litt., LL.M. (Harvard) at the University of Cochin. Although the data presented in the book may be a little old, most of the findings of the study are still valid. The book contains a comparison of management practices in Indian and Non-Indian planting companies. With the recent liberalisation in the economic policy for enlisting foreign investment in India, the study acquires a topical interest.

I owe a great deal of debt to many people, of which the foremost is to my supervising teacher Dr. M. V. Pylee. This is acknowledged with gratitude.

Changanacherry-2,
30.1.1992.

V. Haridasan

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CHAPTER - 1

INTRODUCTORY

The plantation industry is the largest employer of organised labour in Indian agriculture. In the national economy it occupies an important place. Hence plantation industry, more than any other sector of agriculture, is capable of employing trained managers The main plantation crops of India are tea, coffee, rubber and cardamom. The production of plantation crops has shown a higher annual rate of increase than most other crops in India. This has been particularly so in the case of rubber. Since 1963-64 rubber has been showing a higher annual rate of increase in production [1]

The planters were pioneers in many respects. They had developed a system of management out of their experience. The system was largely evolved before the emergence of organised labour and the enactment of different legislative measures conferring rights on them. Naturally such a system could not always be in tune with the developments in management science, as we understand it tody. In the recent past considerable research on management practices has been carried out and many new techniques of management have been developed for application in industrial organizations. But this has had little impact on the plantation industry. Nevertheless this industry is today poised for modernisation.

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1. *Indian Rubber Statistics, Vol 14, 1975, p. 83.*

Therefore a critical study of the management practices in plantations may be appropriate now. Such a study, it is hoped, will focus attention on the desirability of modernising plantation management.

1. EVOLUTION OF MANAGEMENT IN PLANTATIONS

The plantation industry was established by the initiative, organizational ability and investment capacity of Europeans. Till recently its objective and philosophy of management were those developed by them in the initial stages. They generally equated good management with the one that maintained plantations in good condition. In the beginning the forms of organization adopted by them for management were the proprietary and partnership firms. The floating of joint stock companies later was an important development. Many companies had their headquarters located away from the estates. The joint stock companies changed the form of management also.

The arrival of 'managing agent' on the scene further changed the form of management. The managing agency was a business firm developed to provide managerial, financial and technical services to estates whose owners were away from the properties. The arrangement also suited the owners of small estates who could not render a full range of services. Managing agency firms exercised considerable influence in the development of plantations They transferred the authority from the estate manager to that of the agency. In course of time the manager had to take orders from the managing agents.

The link between the agency firm and the estate manager was the visiting agent. The visiting agent was an experienced or practising planter, holding a fairly senior position. His duty was to inspect and report on the conditions of the estate under the stewardship of the managing agency. Naturally he was expected to offer advice to the manager also. The reports of the visiting agent were converted as instructions

for the manager to comply with. This gave the visiting agent further power and authority. The growth of his power and authority was not uniform in all plantations. Much depended upon the attitude of the visiting agent and the traditions of the managing agency.

The growth of small companies and the passing of ownership of some foreign estates into Indian hands, brought about a change in the role of the visiting agent. In small companies the managing director began to assume that role. The abolition of managing agency [2] has also affected the power of the visiting agent. Except a few companies controlling a number of estates, the office of the visiting agent has disappeared in rubber plantation industry. Those who now hold the posts are drawn from among the senior managers.

In the early years management personnel were inducted to the plantations through a system of apprenticeship. Under the system, the trainee was attached to a manager. This was in conformity with the then existing practice of imparting training in many other professions. In large companies, trainees were engaged as salaried assistants. But the training continued to be 'on the job'. Systematic training of managers is yet to be introduced in the industry. It is true that the United Planters' Association of South India and some companies selling agricultural inputs had organised short term training courses in plantation management. But the courses were ad-hoc in nature. In 1974 the Rubber Board started a training course, but the emphasis was on the technical side of management.

The qualities and training of managers are not very much different from those in manufacturing firms in India. However a higher degree of flexibility and general ability would be expected from them. This is due to certain special features of plantation management.

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2. *On or after 3 April 1970 no company shall appoint managing agent or secretaries and treasurers.*

2. SPECIAL FEATURES OF PLANTATION MANAGEMENT

Management theory has been developed in the industrialised nations of the West. It has been the offshoot of industrial and commercial activity. Though the fundamentals of management are universally applicable, plantations have certain special management problems different from those of manufacturing firms.

Plantations are essentially a form of large scale agriculture though a small factory may exist in some plantations. Therefore the problems of managing agriculture are also present in plantations. For meeting these problems certain management techniques and practices different from those employed in the manufacturing industry would be required. The manager and workers live together in the plantation. Very often a plantation is a closed community removed from urban and rural contacts. Therefore the workers have to depend on the manager for a variety of services. Those conditions have brought about an element of paternalistic relationship between workers and manager. The plantation manager will have to enlist the help of workers at odd times when natural calamities cause damage to property. Hence a rigid time schedule may not always work in a plantation. An element of flexibility would be required there. In an industrial undertaking however, working hours and duration of work can be generally enforced strictly. The plantation manager is required to provide the workers, housing, medical and educational facilities and weather protectives among others under statutes. But legislative enactments do not require the manager of an industrial undertaking to provide such facilities.

Plantations generally employ more workers per unit amount of investment compared to manufacturing industries. The dispersal of workers over a wide area is also a feature of plantations. In manufacturing industry work force is located generally on a small area. Therefore control of workers is comparatively more difficult in plantation than in manufacturing industry. As a result an efficient network of transport

and communication and regular inspections are required in plantations.

The degree of initial planning has to be of higher order in plantations than in most manufacturing industries. The extent of initial planning will decide the prosperity of a perennial crop like rubber. In a manufacturing firm machines can be redesigned or altered without much loss while an initial mistake in the selection of planting material may lead a plantation to ruin. The extent of planning should be more in the construction of roads, labour lines and factories.

Another distinction relates to the production of the commodity. There is less variability in the output of a manufacturing firm since the factors of production are generally controllable. In a plantation, production depends upon soil, location, altitude, planting material and climate. Hence vagaries of nature have much more influence in a plantation than in a manufacturing firm. The production is seasonal in plantations while it is not so in manufacturing firms. The gestation period of a manufacturing firm is usually only one or two years and replacement of machinery due to obsolescence can take place in a matter of months. In a plantation the gestation period is longer and in rubber it is about seven years. Moreover a phased programme of replacement of old and uneconomic plantation is necessary for sustaining it as a viable unit.

The method adopted for recruitment of labour is a special feature of plantation industry. Owing to the remote and isolated nature of plantations, recruitment had created difficulties especially in the early stages of the industry. At that time workers had to be brought from distant places by monetary inducements. This had led to abuses also. The *Kangany*[3]

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3. *KANGANY SYSTEM : The word Kangany is of Tamil origin, meaning a supervisor. Kanganies were employed by estate management for recruiting workers from villages*

system which was an offshoot of plantation recruitment had been criticised by the Labour Investigation Committee (Rege Committee) which examined the conditions of plantation labour during 1944–45. Recruitment has not created any serious problem to the manufacturing industry as it is generally located in towns. The employment of family labour is also a feature of plantations.

Another feature of plantation industry has been the introduction of incenitve wages. This is particularly so in the case of tea and rubber. The wages of rubber tappers[4] and tea pluckers are usually paid on the basis of results. The scope for introducing a system of payment by results has been generally more in plantation than in manufacturing industry.

The foregoing discussion would show that the management practices in plantation are somewhat different from those of manufacturing industry.

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on commission basis. In October 1951 the Minister of Labour of the Government of India, laid down certain criteria for eliminating its abuses and gradually abolishing it. The abolition was completed in Madras (Tamil Nadu) in 1958 and in Kerala in 1962. In Karnataka it was not wide–spread and has gone out of existence after its abolition in other states. By the agreements between Kanganies and estate owners, some Kanganies were paid compensation and others were appointed as labour supervisors.

4. TAPPER: Tapper is the person who collects latex (milk of rubber tree). Latex is obtained from the bark of the rubber tree by tapping. Tapping is 'controlled wounding' during which thin shavings of bark are removed.

3. OBJECTIVES OF THE STUDY

The broad objective of the study is to find out the management practices followed in the rubber estates in India. Comparing the management practices followed in the estates belonging to Indian and non-Indian companies[5] is also an objective. It has been widely held that the management practices followed in the estates belonging to these groups vary considerably. Hence attempt is made to find out the divergence between them in regard to various practices and to identify and bring them into broader relief so that the strong points of each would be emulated by the other.

The management practices are examined in the light of well-established management principles and techniques adopted in business and industry. The principles of management which are widely accepted are Planning, Organizing, Staffing, Directing and Controlling. Other management principles and techniques relating to personnel, finance, marketing, materials and transporting are also examined in the appropriate context.

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5. INDIAN AND NON-INDIAN COMPANIES: The distinction was first introduced by the Plantation Inquiry Commission, 1956 in their analysis. This has been subsequently adopted by the Rubber Board also The ownership of shares is the basis for the distinction. Within the non-Indian group of companies, there is also a sub-division of fully non-Indian and partly non-Indian companies. For the present analysis both are treated together. Of the twenty non-Indian estates fourteen were owned by fully non-Indian companies and the remaining six by partly non-Indian companies during the period of study. Some of the senior management personnel in the non-Indian estates were Europeans at that time.

4. SCOPE OF THE STUDY

Structure of rubber plantation industry in India

The rubber plantation industry in India consists of organised and un-organised sectors. The organised sector covers plantations owned by limited companies and government departments and corporations. The unorganised sector consists of plantations belonging to individuals and partnership firms.

In 1974-75, there were 128,428 units producing rubber in India. Of those, 613 units were estates and the rest were holdings*. Table-1 shows the position of estates and holdings in 1974-75.

TABLE – 1

AREA AND NUMBER OF UNITS UNDER RUBBER IN INDIA
(1974–75)

	NUMBER OF UNITS	PERCENTAGE	AREA (HECTARES)	PERCENTAGE
Holdings	127815	99.5	155434	70
Estates	613	0.5	65831	30
TOTAL	128428	100.0	221265	100

Holdings are mainly owned by individuals. Only a small number of holdings belongs to partnership firms while the number of holdings under company form of ownership is very negligible.

Table 2 shows the number of estates belonging to limited companies, Government departments and corporations, individuals and partnership firms. Among the limited companies there were five belonging to non-Indian group of companies.

The details of rubber estates under the organised sector are shown in Table 3. It can be seen from the table that estates belonging to limited companies occupied sixty-eight percent of the total area in the organised sector.

* See the definitions of estate and holding.

TABLE – 2

OWNERSHIP OF RUBBER ESTATES IN INDIA (1974–75)

TYPE OF OWNERSHIP	NUMBER OF ESTATES	AREA (HECT.)	PERCENTAGE
Limited Companies	138	29443	45
Government Departments and Corporations.	18	13852	21
Individuals & Partnerships	457	22536	34
TOTAL	613	65831	100

TABLE – 3

RUBBER ESTATES UNDER ORGANISED SECTOR (1974–75)

TYPE OF OWNERSHIP	NUMBER	NUMBER OF ESTATES	AREA (HECT.)	PERCENTAGE
Limited Companies	93	138	29443	68
Government Departments & Corporations	6	18	13852	32
TOTAL	99	156	43295	100

COVERAGE OF THE STUDY:

The study covers the estates belonging to limited companies in the organised sector of rubber plantation industry in India. There are good reasons for taking up estates alone for the study. In the first place, estates are considerably large units so as to give scope for applying modern management techniques and practices. Secondly under the Rubber Act, the Plantations Labour Act and other statutes, the estates are

required to maintain among others, records, on production, employment and labour benefits. Those Acts require them to submit statutory returns to the Rubber Board and the State Governments. Since a study like the present one should be factual and authentic, such records and returns have also been relied upon for collecting data.

The sample selected for the study has been drawn from among the estates belonging to limited companies. The purpose of selecting sample from them has been to get as authentic, reliable and objective data as possible. The limited companies are under obligation to get their accounts audited by chartered accountants every year. These statutory requirements, it is thought, would make the data collected from the companies more authentic and reliable. Further, more refined data are available from the companies than either from proprietary or partnership firms. These points have weighed in selecting the company estates for the study.

It may also be mentioned that though a large area under estates is owned by Government departments and corporations in various States, the estates under them have not been selected for the study. These estates have come into being only recently and a substantial percentage of area is yet to reach the stage of bearing. Therefore a study of them at this stage will not give a complete picture of their management practices.

Table 4 presents the number of estates and companies covered by the study.

TABLE – 4

ESTATES AND COMPANIES COVERED BY THE STUDY

	TOTAL COMPANIES	COMPANIES COVERED	PERCENTAGE	TOTAL ESTATES	ESTATES COVERED	PERCENTAGE
Indian	88	22	25	118	35	30
Non-Indian	5	5	100	20	20	100
TOTAL	93	27	29	138	55	40

The number of estates under non-Indian companies was only twenty and all of them were examined for the study. In the case of Indian group, a sample of thirty-five estates was selected at random to form thirty per cent of the total number of Indian estates.

The estates covered by the study belong to twenty-seven companies. Of these, five are non-Indian and the remaining are Indian companies. Among the non-Indian companies, one is a private limited company and the rest are public limited companies. Within the Indian group, two are private limited companies. The five non-Indian companies maintain some relationship with two secretarial companies. Of the twenty-two Indian companies six are also maintaining some relations with two Indian secretarial companies. The secretarial companies are the former managing agents.

Of the non-Indian companies one was floated in England while all others were floated in India. This company is sometimes called a sterling company.

The area covered by the study is presented in Table 5. The table shows that the area under non-Indian companies was much more than that of Indian companies. It can also be seen that seventy-one per cent of the total area under limited companies in the estate sector was covered by the study.

TABLE – 5

AREA COVERED BY THE STUDY (1974-75)

	NUMBER	PERCENTAGE	AREA (HECT.)	PERCENTAGE
Total estates under limited companies	138	100	29443	100
Estates selected under indian companies	35	25	8202	28
Estates selected under non-Indian companies	20	14	12660	43

Forming of the companies and estates selected for the study:

The earliest Indian company examined for the study came into being in 1910. Some of the estates managed by Indian companies came into their possession on or after Independence when Europeans sold their properties before leaving India. The period of formation of companies selected for the study is given in Table. 6

Some companies were started as proprietery or partnership firms and some others had changed the name or constitution in the course of years. Table 7 shows the formation of estates as distinct from the formation of companies. The formation of some estates took place before the formation of companies. Hence there were more estates formed before 1910 than companies. This can be seen from Tables 6 and 7.

TABLE - 6

FORMATION OF COMPANIES SELECTED FOR THE STUDY

PERIOD		INDIAN COMPANIES	NON-INDIAN COMPANIES
1910 or before	—	2	**
1911 to 1920	—	5	2
1921 to 1930	—	1	1
1931 to 1940	—	7	**
1941 to 1950	—	3	2
After 1950	—	4	**
TOTAL	—	22	5

TABLE -7

FORMATION OF ESTATES SELECTED FOR THE STUDY

PERIOD	INDIAN ESTATES	NON-INDIAN ESTATES
1910 or before –	11	13
1911 to 1920 –	6	6
1921 to 1930 –	1	**
1931 to 1940 –	4	**
1941 to 1950 –	8	1
After 1950 –	5	**
TOTEL –	35	20

Size of the companies selected for the study:

Table 8 shows the number of estates under the company. It would be seen from the table that there are more Indian companies managing one estate only. One non-Indian company has twenty-eight estates under it. Of these, fifteen are tea estates, seven are tea-cum-rubber estates and six are producing rubber only.

TABLE - 8

NUMBER OF COMPANIES AND NUMBER OF ESTATES

NUMBER OF ESTATES UNDER ONE COMPANY	INDIAN COMPANIES	NON-INDIAN COMPANIES
One estate —	13	3
Two estates —	5	**
Three estates —	4	**
Four estates —	**	1
More than four estates —	**	1
TOTAL —	22	5

of the Indian companies, two are producing other plantation crops and another is a company manufacturing rubber goods. The financial position presented in Chapter VIII is inclusive of these aspects.

Location of the estates selected for the study:

The estates selected for the study are located in the three important States producing rubber in India: Kerala, Tamil Nadu and Karnataka. The study has covered about thirty-two per cent of the total area under estates in India in 1974–75.

Since one of the objectives of the study is to compare the management practices of Indian and non-Indian estates, estates belonging to both groups should be in the same agro-climatic region as far as possible. This has been largely achieved by the estates selected for the study. The details are presented in Table 9.

It may be mentioned that around ninety per cent of the total area under rubber in India is in Kerala State and forty-six percent of the Indian area is in Quilon, Kottayam and Idukky districts of that State. Naturally more estates belonged to Kerala State and particularly to the above districts. It can be seen from the table that only two districts of Kerala have not been represented in the sample i.e., Alleppey and Ernakulam. Alleppey district, it may be mentioned, is largely a backwater region and therefore is not important from the point of view of rubber cultivation. Further there were only two estates in the district in 1974–75. Similarly there were only a few estates in Ernakulam district also. From the above discussion it can be seen that the representation of estates in the study has been fairly wide.

TABLE- 9

GEOGRAPHICAL DISTRIBUTION OF ESTATES SELECTED FOR THE STUDY (1974–75)

STATES/ DISTRICTS			NUMBER OF INDIAN ESTATES	NUMBER OF NON-INDIAN ESTATES
KERALA				
Trivandrum	District	—	1	..
Quilon	,,	—	12	7
Alleppey	,,	—	..	..
Kottayam	,,	—	9	2
Idukky	,,	—	2	2
Ernakulam	,,	—	..	..
Trichur	,,	—	..	4
Palghat	,,	—	1	..
Malappuram	,,	—	1	1
Kozhikode	,,	—	4	2
Cannanore	,,	—	1	..
TAMIL NADU				
Kanyakumari	District	—	3	1
KARNATAKA				
Coorg	District	—	1	1
TOTAL		—	35	20

5. METHOD OF THE STUDY

The study had been conducted mainly on the basis of interviews carried out with the managers, managing directors or other senior executives of the estates and companies. For that purpose a detailed questionnaire was designed. In addition, the balance sheets and profit and loss accounts of the companies were collected and examined. Copies of various statutory and other returns submitted by the companies to the Rubber Board and State Governments were also collected and examined. However the questionnaire, the balance sheet and the profit and loss account were the main sources for the collection of data.

The data collected related to the year 1974-75. Hence the reference year for the study is the financial year 1974-75. Where five-year comparisons are made as in the case of yield, profit and cost of production, the five-year data for the period prior to and including 1974-75 were collected and examined.

6. DEFINITIONS OF IMPORTANT TERMS USED IN THE STUDY

There are four important terms from the point of view of the study. These terms are used in the course of discussion at different places. Hence they may require definition.

ESTATE: Estate is a "land contiguous or non-contiguous, aggregating more than 20.23 hectares (fifty acres) planted with rubber and registered with the Rubber Board under a single ownership" [6].

HOLDING: Holding is a "Rubber area contiguous or non-contiguous, aggregating 20.23 hectares (fifty acres) or less and registered with the Rubber Board under a single ownership"[7].

MANAGER : The word "manager" wherever used includes the superintendent also. In rubber plantations the usual term used to designate the manager is superintendent. As such, an assistant manager will include an assistant superintendent also.

PLANTATION : A plantation is an "agricultural undertaking regularly employing hired workers which is situated in the tropical or sub-tropical regions and which is mainly concerned with the cultivation or production for commercial purposes of coffee, tea, sugarcane, rubber, bananas, cocoa, coconuts, groundnuts, cotton, tobacco, fibres (sisal, jute

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6 *INDIAN RUBBER STATISTICS, Vol. 14, 1975, p. i*

7. *Ibid., p. i.*

and hemp) citrus, palm oil, cinchona or pineapple; it does not include family or small scale holdings producing for local consumption and not regularly employing hired workers"[8].

In India, the Plantations Labour Act, 1951 has added a minimum size and a minimum number of workers to the definition of plantation. The Act has defined a plantation as any "land used or intended to be used for growing tea, coffee, rubber or cinchona which admeasures 10.117 hectares or more and in which thirty or more persons are employed or were employed on any day of the preceding twelve months."[9] The Act empowers the Government to add any new crop to the definition. Accordingly the Government of Kerala has added cardamom and cocoa as plantation crops.

7. REVIEW OF STUDIES CONDUCTED EARLIER

As far as rubber plantation industry is concerned a comprehensive study of management practices has not been attempted so far. Enquiries also reveal that such a study has not been conducted in tea, coffee or cardamom plantations also. As such there is no published record having a direct bearing on the present study to mention. A number of general studies have been made on rubber plantation industry in the past. In addition to general studies, studies on plantation labour and rubber plantation labour specifically have also been made. These studies do not focus adequate attention on management practices. They cover certain aspects of management and are likely to throw some light on the subject under examination.

Studies on rubber:

The most comprehensive general study on rubber was

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8. *Convention No.110 of the Committee on Work on Plantations, International Labour Organization, Geneva, 1950*

9. *Plantations Labour Act, 1951, Section i (4) (a).*

made by the plantation Inquiry Commission 1956 [10] along with the study on tea and coffee plantation industry. The Commission was appointed by the Government of India. The growth of the industries, distribution of area under rubber, capital structure, marketing, transporting, labour and small holdings were the main areas of the Commission's inquiry. The Commission made a number of far reaching recommendations.

The marketing problems of rubber particularly those of small holdings were examined by D. V Reddi, [11] an officer of the former Madras Government in 1950 at the instance of the Rubber Board. The Tariff Board [12] and its successor the Tariff Commission [13&14] had made a number of studies in connection wtth the fixation of rubber prices.

The Board and the Commission had dealt with the cost of production of rubber. In the process of their enquiry some

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10. *Madhava Menon, P. (Chairman). Report of the Plantation Inquiry Commission Part III Rubber, Manager of Publications, Government of India, Delhi, 1956, pp. 345.*

11. *Reddi, D.V., Report on Marketing Organization for Rubber, Indian Rubber Board, Kottayam, South India 1950. pp. 27.*

12. *Dey, H. L. (President, Tariff Board), Report of the Indian Tariff Board on the Prices for Raw Rubber and Protection and Assistance to the Rubber Plantation Industry, Manager of Publications, Government of India, Delhi, 1951, pp. 108.*

13. *Bhat M D. (Chairman, Tariff Commission), Report on the Revision of Prices of Raw Rubber, Manager of Publications, Government of India, Delhi, 1953, pp.38.*

14. *Pai, M. P. (Chairman, Tariff Commission), Report on the Fixation of Raw Rubber Prices, Manager of Publications, Government of India, Delhi, 1968, pp. 102.*

very useful data on the conditions of rubber plantation industry were collected. The Estimates Committee of the Lok Sabha, [15] in the course of their enquiry had examined the conditions of rubber plantation industry in 1961. This was done in the background of the performance of the Rubber Board. In 1963 the Rubber Board sent a team of officials to Malaya[16]. They conducted studies with a view to suggesting improvements to the rubber plantation industry in India. The recommendations of the official team mainly related to the organization of development, research end extension activities in rubber plantation industry.

The Small Holdings Economics Enquiry Committee [17] appointed by the Government of India in 1967 had studied the problems of the industry. The enquiry was confined mainly to the conditions of small growers. However some general problems connected with the industry had been examined by them.

Studies on Plantation labour:

The Royal Commission on Labour [18] was the first official body to study the conditions of plantation

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15. *Dasappa, H C. (Chairman, Estimates Committee, 1961–62), Hundred and Forty Eighth Report (Second Lok Sabha)– Ministry of Commerce & Industry, Rubber Board, Kottayam (Reports and accounts). Lok Sabha Secretariat, New Delhi, 1961, pp. 51.*

16. *Rama Varma (Chairman, Rubber Board), Report of the Delegation to Malaya, Rubber Board, Kottayam, S. India,* 1963, *pp.* 36.

17. *Abdullah, T.M. (Chairman), Report of the Rubber Small Holdings Economics Enquiry Committee, Rubber Board, Kottayam, S. India,* 1968, *pp.* 120.

18. *Report of the Royal Commission on Labour in India. Quoted in the Report on an Enquiry into Conditions of Labour in Plantations in India, p. i.*

labour in India. The Commission made the study between 1929 & 31. Among others the Commission collected data on employment, earnings and living conditions. The Labour Investigation Committee [19] popularly known as the Rege Committee, was the next official body to make a study of plantation labour. The Committee was appointed in 1944. The Committee's Report was a comprehensive one covering all aspects of plantation labour. The Director of the Labour Bureau [20] undertook a quick study of the conditions of plantation labour immediately after Independence. This was done at the instance of the Industrial Committee on Plantations.

The Report of the Minimum Wages Committee, 1952 [21] was perhaps the first attempt of the Government of Travancore–Cochin to study the conditions of plantation labour. The Committee conducted a family budget survey of plantation labour to fix minimum wages. It was able to collect some useful data on other aspects of plantation labour. The Report of Balagangadhara Menon[22] on *Kangany* system was an important one. It had led to the abolition of the *Kangany* system in Kerala.

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19 *Rege, D. V. (Chairman, Labour Investigation Committee), Report on an Enquiry Into Conditions of Labour in Plantations in India, Manager of Publications Government of India, Delhi,* 1946, pp. 234.

20. *Deshpande, S. R. (Director, Labour Bureau), Report on Enquiry into the Cost and Standard of Living of Plantation Workers in South India, Manager of Publications, Government of India, Delhi,* 1951, *pp.* 50.

21. *Pillai, V. R. (Chairman), Report of the Minimum Wages Committee for Plantations, Travancore–Cochin, Government Press, Ernakulam,* 1952, pp. 63.

22. *Balagangadhara Menon, P. (Chairman), Report of the Committee for Enquiry into the Kangany System in the Plantations of Kerala, Kerala Gazette No.* 41, *dated* 2 *October,* 1959, *pp.* 34.

At the national level the Government of India had appointed a Working Group in 1962 [23] to examine the position of housing on plantations. Similarly a One Man Committee [24] had been appointed to enquire into the employment position. The conclusions and observations of these two bodies are also of use in relation to plantation labour. The conclusions of the Industrial Committee on Plantations [25] published by the Government of India provide a review of that important tripartite committee's activities during the last many years.

The Study Group for Plantations (Coffee/Rubber) [26] appointed by the National Commission on Labour in 1967 made a thorough study of the conditions of rubber and coffee plantation labour and made a number of recommendations. Some of the recommendations were accepted by the National Commission and subsequently by the Government of India.

Studies of the International Labour Organization:

The International Labour Organization has a special Committee on plantations, called the Committee on Work on Plantations. The first session of the Committee was held in

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23. *Chatterjee, N. N. (Convener), Report of the Working Group on Plantations Labour Housing, Manager of Publications, Government of India, Delhi,* 1964, *pp.* 113
24. *Chatterjee, N. N., Report on Employment Position in Plantations by One Man Committee, Manager of Publications, Government of India, Delhi,* 1966, *pp.* 249.
25. *Ministry of Labour & Employment, Government of India, Conclusions of the Industrial Committee on Plantations* 1947–1961, *Manager of Publications, Government of India, Delhi,* 1962, *pp.* 21.
26. *Habeeb Mohamed, P. S. (Convener), Report of the Study Group for Plantations (Coffee/Rubber) – National Commission on Labour, Manager of Publications, Government of India, Delhi,* 1968, *pp.* 58.

Bandung, Indonesia in 1950. Till 1974–75, six sessions of the Committee were held. The Committee had prepared a number of reports on various aspects of plantation labour. Notable among them are. 'Living and Working Conditions and Productivity on Plantations', [27] 'Labour Inspection on Plantations', [28] 'Social Consequences of Technological Development on Plantations' [29] and 'Conditions of Women and Young Workers on Plantations'. [30] The International Labour organization conducted a world-wide survey of the conditions of plantation labour. The Report on the findings of the survey was published in 1966 under the title 'Plantation Workers'. [31] The India Office of the I. L. O., also made a study of the conditions of plantation labour in 1960 under the series, 'Recent developments in certain aspects of Indian economy'. [32]

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27. *International Labour Organization, Living and working Conditions and Productivity on Plantations, I. L. O. (Committee on Work on Plantations, Third Session). Geneva,* 1955, *pp.* 121.

28. *International Labour Organization, Labour Inspection on Plantations, I. L. O. (Committee on Work on Plantations, Fifth Session), Geneva,* 1966, *pp.* 61.

29. *International Labour Organization, Social Consequences of Technological Development on Plantations, I. L. O. (Committee on Work on Plantations, Sixth Session), Geneva, 1970, pp. 74.*

30. *International Labour Organization, conditions of Work of Women and Young Workers on Plantations, I. L. O (Committee on Work on Plantations, Sixth Session), Geneva, 1970, pp. 95.*

31. *International Labour Organization, Plantation Workers, I. L, O. Geneva, 1966, pp. 283.*

32. *International Labour Organization, Recent Developments in Certain Aspects of Indian Economy V–Plantation Labour in India – Non–Manual Workers in India, I. L. O., India Branch, New Delhi,* 1960, *pp.* 159.

Studies on rubber plantation labour:

The Labour Bureau of the Government of India had made two studies on the conditions of rubber plantation labour. One of the studies related to the family budget survey of plantation labour at Mundakayam. Mundakayam is the most important centre of rubber plantation labour in India. [33] Hence the survey mainly related to the conditions of rubber plantation labour. The survey was conducted in 1958–59 with a view to framing the consumer price index number for working class of Mundakayam centre. In 1961–62 the Labour Bureau made a general study of the conditions of rubber plantation labour. The study covered among others, employment position, occupational groups, working hours and social security. It was a comprehensive study. [34] The Labour Bureau also undertook an occupational wage survey. [35] The survey also collected data on wages and earnings of rubber plantation labour.

In 1961 the Government of India appointed a Wage Board [36] for rubber plantation industry along with similar Boards for coffee and tea plantation industry. Though the

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33 *Seal, K. C. (Director, Labour Bureau), Report on Family Living Survey Among Industrial Workers, 1958–59– Mundakayam, Manager of Publications, Government of India, Delhi, 1967, pp. 102.*

34. *Seal, K.C. (Director, Labour Bureau), Report on Survey of Labour Conditions in Rubber Plantations in India. Manager of Publications, Government of India, Delhi 1964, pp. 62*

35. *Seal, K. C. (Director, Labour Bureau), Occupational Wage Survey. 1958–59 : Industry Reports Vol. I. Plantations and Mines, Manager of Publications, Government of India, Delhi, 1965, pp. 145.*

36. *Dave, L. P. (Chairman), Report of the Central Wage Board for Rubber Plantation Industry, Manager of Publications, Government of India, Delhi, 1966, pp. 243.*

Wage Board dealt mainly with the fixation of wages and other related matters, their report contained some general observations about the conditions of rubber plantation labour also.

Studies of the Rubber Board:

The Rubber Board has made a number of studies on various aspects of rubber plantation industry. Mention may be made of the Family Budget Surveys of rubber plantation labour conducted in Kottayam district in 1963 [37] and Kozhikode district in 1973. [38] A general survey of the conditions of rubber plantation labour was made in 1972. [39] A survey of the rubber small holdings [40] and a study of rubber marketing [41] were also made. The studies and surveys were published by the Rubber Board.

The foregoing review of studies already undertaken clearly shows that there is scope for a worth-while study on management practices in rubber estates in India based on scientific methods and relying upon sufficiently authentic and dependable data.

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37. *Haridasan, V.*, Family Budget and Social Security Benefits of Rubber Plantation Workers in India, *Rubber Board, Kottayam, South India*, 1967, *pp.* 50.
38. *Krishnankutty, P. N. and Haridasan, V.*, Family Budget of Rubber Plantation Workers in Kozhikode District–Report of a Survey, *Rubber Board, Kottayam, S. India*, 1976, *pp.* 64.
39. *George Jacob*, Labour Condition in Rubber Estates, *Rubber Board, Kottayam, S. India*, 1974, *pp.* 50.
40. *Unni, R. G. and George Jacob*, Rubber Estates in India–Report of Sample Survey – 1969–70, *Rubber Board Kottayam, S. India*, 1972, *pp.* 52.
41. *Unni R. G. and Haridasan, V.*, A Study of Co-operative Rubber Marketing Societies, *Rubber Board, Kottayam, S. India*, 1974, *pp.* 51.

CHAPTER – II

RUBBER PLANTATION INDUSTRY – A HISTORICAL REVIEW

1. INTRODUCTION

The rubber plantation industry has a chequered history in india. Like many other crops it was introduced from outside. Its habitat is the Brazilian jungle. It was the Europeans who took up rubber cultivation first and they were followed by the Indians. The industry has passed through many vicissitudes over the decades, alternated by prosperity and depression. A characteristic feature is the regulation and control exercised by the government in due course in the interest of the industry. These developments are discussed in this chapter.

In the history of natural rubber the name India has a significance. The existence of rubber came to the notice of the civilised world from the writings of navigators who followed Christopher Columbus. 42 Columbus, who undertook an

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42. *Important landmarks in the history of natural rubber:–*
   (a) 1530. *P. M. d' Anghiera first mentioned 'rubber' in print as "gummi optimum".*
   (b) 1536. *T. de. Motolina in his 'History of New Spain' described various Aztec Religious rites involving rubber.*
   (c) 1615 *F. J. de. Tarquemada mentioned that Mexican Indians made shoes, headgear, clothing and other water–tight articles from the gum obtained from the milk of a tree.*
   (d) 1770. *J. Priestley used 'rubber' to erase lead pencil marks and thus coined the word 'rubber' in English language.*
   Source: *Schidrowitz, P. and Dawson, T. R. (Editors).* History of the Rubber Industry, *W. Heffer & Son, Ltd., Combridge,* 1952, *pp.* 3–12.

expedition to find a new route to India, wrongly identified the inhabitants of the new world he discovered as Indians. However after the discovery of a new route to India via the Cape of Good Hope, the inhabitants of the new continent ecross the Atlantic began to be called Red Indians. Similarly the successors of Columbus who could discover rubber called it 'India rubber'. This term has survived even today.

India is also responsible for the introduction of natural rubber to the East. It was the India Office, London, which financed Sir Henry Wickham's expedition to the Amazon valley in Brazil to procure rubber seeds in 1876. At that time Burma and Ceylon (Sri Lanka) were also parts of India. Wickham's collection of seeds from the Amazon valley was brought to the Kew Gardens, London, from where seedlings were sent to Ceylon (Sri Lanka), Malaya (West Malaysia) and India.

Rubber producing trees, vines and shrubs:

There are a number of trees, vines and shrubs which produce rubber. Of these, the most important are Para rubber *(Hevea braziliensis)*, Panama rubber (*Castilloa elastica*), Ceara rubber (*Manihot glaziovii*), *Ficus elastica* and *Funtumia elastica*. The first three are the natives of South and Central America while the fourth has its natural habitation in South-East Asia and the last one is a native of Africa. In fact as early as 1810 the famous Botanist Rox Bourgh assisted by M. R. Smith of Silhet found *Ficus elastica* growing wild in the forests of Assam.[43] Before Para rubber had become the established source of rubber, *Ficus elastica* was tapped on a large scale in North East India and Upper Burma. Between 1880 and 1890 the production of rubber from that source averaged between two hundred to four hundred tonnes annually. *Ficus elastica* was also grown as an adjunct

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43. *Gosh, H. H.*, Realm of Rubber, *J. B. Daymond, Calcutta* 1928, *p.* 141.

of tea in some plantations in Assam until the slump in rubber in about 1921. During the Second World War, efforts were made to augment the supply of rubber from these abandoned sources at the instance of the Forest Research Institute, Dehra Dun.

2. EARLY DEVELOPMENTS

Efforts of the India Office, London:

The idea of supplementing Para rubber (*Hevea brazilliensis)* with the product of plantations was pursued due to the increased demand for rubber as early as 1860. However until 1872 the subject was not recognised as of real importance. In that year James Collins, an Edinburgh Botanist, was instructed by the India Office, London, to draw up a report as to whether rubber plantations could be raised in India. In 1875 Robert Cross and C. R. Markham were sent to Panama to collect the seeds and cuttings of *Castilloa* tree. The success in the introduction of Cinchona as a plantation crop from its wild habitat had also influenced the decision of the Government of India. [44]

Meanwhile Sir Joseph Hooker of the Kew Gardens, London, had been attracted to the idea of raising Para rubber by the drawings and specimens sent to him by Henry Wickham (later Sir Henry Wickham). This enabled him to determine botanically the tree producing Para rubber. Joseph Hooker who himself became keen on the subject, persuaded Clements Markham of the India Office to obtain the seeds. Accordingly Wickham was entrusted with the task of procuring the same.

Role of Henry Wickham:

Henry Wickham was enterprising enough to make several excursions between 1866 and 1876 to the valleys of the Amazon and Orinco rivers in Brazil. Records show that while on the Alto Amazon, Wickham received a letter from Joseph

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44. *Gosh, H. H.*, Op. cit., *p.* 143.

Hooker enclosing the 'Commission' from Lord Salisbury (then Secretary of State for India) warranting him to collect the seeds of *Hevea braziliensis* and send them to the Kew Gardens. Wickham was not instructed as to to the ways and means he should adopt for the purpose. His success was not without a stroke of luck. News came to him that a new liner, S.S. Amazonas, was going to be inaugurated between Liverpool and Amazonas, was going to be inaugurated between Liverpool and Amazon. The vessel on arrival at the upper Amazon was abandoned by the crew without any return cargo. Wickham, who was determined to take the chance, wrote to the skipper chartering the ship on behalf of the Government of India.

Working with as many Red Indians as he could get at short notice, Wickham collected and packed heavy loads of seeds. In order to get clearance from the Port of Para, Wickham and the skipper had to explain to a local officer that they were "exceedingly delicate botanical specimens specially designated for delivery to Her Britannic Majesty's own Royal Gardens of Kew." [45]

Wickham thus collected and delivered at Kew, on 16 June 1876 about 70,000 *Hevea* seeds, the expenses for which were paid by the Government of India. A large number of them germinated. Some of them were sent to Calcutta. Most of the remaining seeds were sent to Ceylon (Sri Lanka). What happened to the planting materials sent to Calcutta is not known. From published records it is seen that India received the original planting material of *Hevea* rubber from Ceylon in 1877.

Early plantations of rubber:

Sir Dietrich Brandis, Inspector General of Forests, observed in 1873 that Kanara, Malaber and Travancore offered desirable conditions for the successful cultivation of *Hevea*

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45. *Browne, E. A.*, Rubber, *Adam and Charles Black, London*, 1912, *p.* 55.

rubber. Sir George Watt reviewing the efforts made in that direction in 1890 observed that all experience subsequent to 1873 confirmed the original view of Brandis. 46

Since, *Hevea* rubber is a perennial tree, it was thought that it could be raised as a controlled forest product. The first attempt therefore was made in the teak plantations of Nilambur valley in Kerala. In 1879 twenty-eight *Havea* plants were received from Ceylon and plented in Nilambur. Somehow the forest officials of Nilambur were not convinced of the utility of the plantations. A contemporary account shows that the depressing reports of the Forest Department had deterred the aspirations of planters in the Madras Presidency and thus enabled the planters of Ceylon and Malaya to get ahead of them. Many of the *Hevea* trees planted at Nilambur were allowed to perish. 47

F. J. Ferguson of Calicut also obtained some *Hevea* plants from Ceylon in 1886. He also made experimental plantings of Ceara and *Castilloa* rubber on behalf of the Government of Madras at Plantation House, Calicut and at Punoor (both in Kozhikode District of Kerala).

A feature of the early development was the introduction of rubber along with tea and coffee. Thus in about 1882 Colin Mackinzie tried an experiment in cultivating Ceara rubber along with tea in Ingapoya in Calicut taluk (Kozhikode District). Around the same time Ceara rubber was tried in small plots as shade trees among coffee plants.

Ceara rubber was the first to be introduced on plantation scale into India. It was obtained from the Kew Gardens and planted in the Nilambur teak plantations in 1878. Ceara rubber was also planted in Calicut taluk and Kotagiris (Nilg-

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46. *Willie, J. A. and Fereirra, O. G.*, Note Rubber Cultivation, *Higginbotham & Co, Madras*, 1907, *p.* 19.

47. *Speer, S. G. (Ed)*, UPASI 1893 – 1953. *United Planters' Association of South India, Coonoor*, 1953, *p.* 213.

irs District of Tamil Nadu). Another variety planted was Panama rubber. It is reported to have been planted in Hawthorne estate in the Shevaroys (Near Salem, Tamil Nadu.)

3. PROGRESS OF RUBBER CULTIVATION

Rubber in Travancore:

In 1877 a few rubber plants were sent to the Elaya Raja of Travancore from the Royal Botanic Gardens, Peradiniya, Ceylon (Sri Lanka). In 1887 G. Anderson planted a few *Hevea* seedlings in Shaliacarai estate in South Travancore. A few years later a good deal of Ceara rubber was planted in the estates of Chenakara and Wallaradi (Kottayam District, Kerala). [48]

In 1902 J. J. Murphy, J. A. Hunter, K. E. Nicoll and C. M. F. Ross formed the 'Periyar Syndicate' and commenced prospecting land for rubber cultivation on the banks of the Periyar river (Kerala State). In August 1902 J. A. Hunter, K. E. Nicoll and G. Nicoll Thompson commenecd planting at Thattakad near Alwaye (Ernakulam District, Kerala State). [49] In 1904 further developments took place particularly in central Travancore. In that year J. J. Murphy, H. Drummond Deane and R. S. Imray started planting in Yendayar, Eldorado and Mundakayam estates, respectively. [50]

The next six years saw considerable activity in *Hevea* rubber planting. During that period two important rubber companies i. e., the Travancore Rubber and Produce Company and the Malayalam Rubber and Produce Company came into existence. A number of small plantations also came into being around that period. By 1910 Mundakayam had become

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48. Ibid, *p*, 214.

49. Ibid., *p*. 215.

50. Ibid., *pp*. 215 – 216.

the leading centre of rubber plantations in India with an area of about ten thousand acres (4047 hectares). This was around half of the then existing rubber area. By that time Indians also began to take interest in planting rubber.

Rubber in Cochin:

Rubber was first planted in Cochin in 1905 when Nicoll obtained a grant of forest land at Palapilly and planted about forty acres (16 hectares). In the same year E. G. Windle on behalf of a syndicate took up a block of forest land for planting. In 1906 three hundred acres (121 hectares) were planted by each. By 1907 the total area was over one thousand acres (405 hectares).

A grant of thousand acres (405 hectares) of forest land lying on the main road from Trichur to Palghat was obtained by E.G. Windle and R.E. Campbell Compertz in 1906. They planted four hundred acres (162 hectares) and subsequently sold the same to the Cochin Rubber Company Ltd., Colombo, in whose name the Government title was issued. Out of the remaining land, four hundred acres (162 hectares) was planted in 1906 and two hundred acrer (81 hectares) in 1907 and 1908.

Rubber in the Nilgiris and the Shevaroys:

The first attempt in these areas was made for experimental purpose. In 1881 some Para rubber and Panama rubber were planted in the Government Botanical Gardens at Burliar in the Nilgiries. R. L. Proudlock, once Curator of the Government Botanical Gardens, Burliar had done yeoman service for the development of rubber.

In 1882 one of the planters of Kotagiri (Glenburn estate) tried Ceara rubber in small plots as shades among coffee plants. But it was later discovered that Ceara rubber actually killed the coffee growing under its shade. The yield of Ceara rubber was also variable and uncertain. Further the damage from monkeys, pigs and porcupine was also considerable. These reasons led to the general neglect of the experiment.

In 1898 A. G. Nicolson planted some Para rubber and Panama rubber in his Hawthorne estate in the Shevaroy Hills, near Salem. In 1902 he introduced some more of Para rubber in his Glenburn estate in Kotagiri. The biggest venture in the Nilgiris district was that of Glenrock estate which obtained rubber seeds from the Burliar gardens.

Rubber in Goa:

Some Europeans of Goa had felt that the land and climate in Goa would be suitable for rubber cultivation. Accordingly Para rubber was planted in Ponda, Goa by 1900. In 1906 attempts were made to plant Para rubber at Aldona and Margao. The seedlings were obtained from Belgaum. A contemporary writer had observed in 1906 that Goa possessed the nucleus of a *Hevea* plantation in the vicinity of Ponda. 51

World rubber boom and Government encouragement:

A study of the early developments of the industry would not be complete without mentioning the immediate urge for planting rubber in India. With the invention of pneumatic tyre and the development of internal combustion engines by the close of the last century, a frantic attempt was made all over the world to obtain more rubber. The main source of natural rubber then was the Brazilian jungles, the production of which could not be increased to match with the increased demand. The world production of rubber in 1900 was about 45000 tonnes while consumption was 52500 tonnes. This imbalance could not continue for long without an alternative source of supply.

The increased demand naturally raised the price of rubber. By 1900 a marked increase in the price began to be seen. The all time record was reached in 1910. The average price in that year was U. S. Dollars 2267 per tonne (about rupees nineteen per kilogram) in the New York market. This exhorbitant price led to a scramble for planting rubber in the

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51. *Willie, J. A. and Ferreira, O. G., Op. cit., p.* 88.

West Coast of India. This attracted a satirical comment from the then Dewan of Travancore who said in 1906 that it is a

> "question however for deep consideration how far these sanguine calculations are well founded. In the first place it is absurd to suppose that the price of 4 sh. per lb. will be maintained especially as the whole available land of the world will be presently brought under rubber cultivation and the market will be so glutted with rubber that it may soon turn out to be an unprofitable cultivation" 52

The Governments of Madras and Mysore realising the enormous potentialities for the development of the industry in their states, passed orders giving preferential treatment for rubber cultivation. Thus the Madras Government exempted all lands already planted or to be planted with rubber from assessment of tax for three years in the Wynad and for five years in the Nilgiris by an order of 1904. By another order of 1907 rubber plantations in the Anamalais were also allowed exemption from tax assessment for three years.

The Government of Mysore also passed a similar order in 1906 with a view to encouraging local planters. By that order the Government decided to grant a maximum of five hundred acres (202 hectares) per planter free of assessment of land tax for the first five years. This was intended to encourage the development of plantations in the Malanadu area of Mysore State.

4. RUBBER PLANTATIONS BY INDIANS

Role of the Malayala Manorama:

In the development of rubber plantations by Indians, the *Malayala Manorama*, a leading Malayalam daily of Kerala

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52 *Quoted in Speer, S. G.*, Op. cit., *p.* 218.

(at that time a by-weekly published on Wednesdays and Saturdays) played an important role, particularly in the erstwhile State of Travancore. Between 1905 and 1910 the journal published thirteen articles and editorials on rubber cultivation and succeeded in arousing considerable public interest. The first editorial on the subject appeared on 10 June 1905. It referred to the heavy rush for rubber cultivation among European planters and the policy adopted by the local Government in leasing or selling land. According to the journal, this had led to hardship to local cultivators. Again on 2 December 1905 the Malayala Manorama published a detailed editorial. A passage from the same is reproduced below:

> "For a long time we have been hearing of the great interest taken by the Europeans in this country in rubber cultivation. But we are surprised to note that none of our people has taken any step or shown any interest in the matter. When one realises the enormous profit this cultivation will bring to us, our lethargy and lack of enterprise will be condemned by all patriotic people. The finest land suitable for rubber cultivation is available in plenty in Travancore .....
> It is because of this realisation that Europeans are moving heaven and earth to corner all our available land.... It is high time for the people of the State to realise the opportunity and make a concerted offort even by promoting some joint stock companies to enter the field. We draw the immediate attention of all people who have received education not to miss this opportunity",

On 13 February 1907 the same journal advocated that,

> "From the available calculation of the profitability of rubber cultivation, we like to assure the public that at present prices rubber cultivation is more paying than gold mines. It is a great pity that our

farmers are so disinterested about such a profitable venture. It is equally unpardonable and shameful that our Government is doing nothing to encourage our farmers or assist them to undertake this profitable venture"

The journal continued this crusade for years. In the editorial of 14 August 1909 the *Malayala Manorama* assured all cultivators that there was no need for any fear in regard to the fall in price of rubber and stated that,

> "Rubber tree can be tapped from the 5th year onwards. All the expenses of the 5 years' cultivation will be recovered from the price of one years' rubber and there will still be a surplus. After this, every year the profit will go on increasing. From one acre of rubber it is estimated that the cultivator can get 150 gold sovereigns as profit every year. Since the use of rubber is steadily increasing there is no chance of any price fall in the near future according to our information. If the Europeans can conduct this lucrative cultivation in such an organized manner, all are wondering why people of our country are not entering this field."

Again on 2 March 1910 the journal wrote under the title 'Mad Rush in England for Rubber Cultivation' that,

> "It is no wonder that rubber planters have become mad when one realises that the maximum cost of production of a pound of rubber is Re. 1 only, while the profit is over Rs. 5. If gold is cut out from gold mines and sold, the profit will not be that much."

First Indian rubber company:

At last the efforts of the *Malayala Manorama* did bear

Note: The excerpts reproduced from the Malayala Manorama *are translated from Malayalam by the author.*

fruit. The first joint stock company of Indians to plant rubber was floated in 1910 under the name – the Malankara Rubber and Produce Company Ltd. The need for forming more such companies was emphasised again by the Journal on 27 April 1910. The Malankara Rubber and Produce Company had fifteen thousand shares, out of which only twelve thousand shares were offered for public subscription. The face value of a share was thirty rupees of which only twenty rupees was called immediately and the balance was to be paid in two instalments in January 1912 and January 1913. By the end of 1910 three more companies were floated by Indians: the Marthoma Rubber Company, the Kuttanad Rubber Company and the Travancore Commercial Company.

Small rubber growers:

Around the same time individual farmers also started rubber cultivation. The Mundakayam correspondent of the *Malayala Manorama:* wrote on 11 May 1910 that:

> "I am extremely happy to report the widespread attention received from among local farmers for the series of articles pubished on rubber. People have come forward to cultivate four, five, ten and twenty acre plots with rubber. Shri P. T. Thomas Vakil has started a plantation of 50 acres. He has planted over one lakh seeds in the nursery. Shri K. T. Dominic Vakil is preparing a 30 acre plot for cultivating rubber. Further a rich *Namboori* has begun

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Note:– 1. The first directors of the Malankara Rubber and Produce Company were:- Rev. C. P. Philipose of the Marthoma Church; S. Ramaswami, Cashier, Madras Bank, Alleppey; Arakal Parameswaran Pillai, B.A. B.L; John Chandy, Superintendent, C. M. S. Press; K. V. Chacko, B. A. L. T., teacher M. D. Seminary High School; K. C. Mammen Mappilai, Editor, Malayala Manorama and P. John, Manager Kaliar Rubber Estate.

2. Namboori *is a Malayalee Brahmin.*

to plant 50 acres with rubber in a hill area belonging to him in Cochin State. His staff have already contracted for the purchase of 20,000 seedlings from Mundakayam, Further in Talayar Hill area in Devikulam, Mr John Anthony, a Chinese national has already started rubber cultivation."

The developments in Travancore had a salutory effect on the development of plantations in the neighbouring State of Cochin also. The first rubber company of local people called the Vaniambara Rubber Company was startad in 1911. The Cochin Government had in the meanwhile taken a decision to grant land, adjacent to forests and which could not be utilised for raising forest produce, for rubber cultivation. This enabled the company to get thousand acres (405 hectares) of land in Trichur taluk. This company had made a condition that its shares would be sold only to those belonging to Cochin State.

Cost of cultivation in early years:

As is currently practised, rubber used to be tapped in the seventh year of planting. However the very attractive price induced people to tap rubber trees even in the fifth year. At that time it was a practice to send people to Ceylon for training in rubber cultivation. A person who had undergone such a training stated in an article published in the *Malayala Manorama* dated 27 April 1910 that rupees four hundred would be sufficient to meet the cultivation expenditure upto the fifth year and that two hundred and fifty trees could be raised in one acre of land. However according to P. John, Manager of Kaliar estate four hundred and fifty rupees would be necessary for raising an acre of rubber upto the fifth year in European estates. He added that from his experience, three hundred rupees would be sufficient for Indian planters. According to him hundred and fifty rubber trees could be raised in one acre of land. [53]

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53. Malayala Manorama, *Kottayam, South India, 9 April* 1910.

TABLE – 10

COST OF PRODUCTION OF COMPANIES

NAME OF THE COMPANY		CAPITAL (Rs. in lakhs)	CULTIVATION EXPENSES (Rs.)*	LAND IN POSSESSION (Hectares)	LAND TO BE CULTIVATED (Hectares)
Cochin Rubber Company	—	6.00	453	436	4
Edivenna Rubber & Tea Company, Malabar.	—	3.50	266	448	111
Kinaloor Rubber Co., Malabar.	—	5.00	449	1074	640
Kuttiadi Rubber Co., Malabar.	—	3.00	378	546	320
Periyakaramalai Tea & Produce Co., Anamalai.	—	3.00	426	285	..
Periyar Rubber Co., Travancore.	—	10.00	542	380	29
Puthukkadu Rubber Co., Cochin.	—	2.40	292	408	76
Thodupuzha Rubber Co., Travancore.	—	5.00	458	612	72
Malankara Rubber & Produce Co., Travancore.	—	4.50	346	607	81

Source: *Malayala Manorama*, 26 July 1916. (Converted to hectares.)

* Per acre.

Table 10 shows the cost of production of nine rubber companies set up in India upto 1916. These include both Indian and European companies. The table shows that the maximum expenditure needed for raising an acre of rubber at that time was five hundred and forty-two rupees and the minimum two hundred and sixty-six rupees.

Cultivation practices in early years:

It will be interesting to examine the cultivation practices prevailing at the time. The common practices which are now in vogue were being gradually developed. In an article published in the *Malayala Manorama* dated 6 April 1910, a planter had advocated that digging the correct pit was the most important operation. He further stated that the pit should be $2 \times 2 \times 2$ feet (the current practice is to dig pits of 3^3feet or 91^3 c.m.). He also emphasised the importance of weeding. Another practice was the use of forks for loosening the soil frequently around the tree. The application of manure, both organic and inorganic was not mentioned by him. In fact he stated that rubber would not require any particular manuring. He had also mentioned the practice of tapping at the age of four or five years. The tapping method adopted was 'herring bone cut'. This method has been subsequently adandoned as it was found to injure the rubber tree. For coagulating rubber, Acetic acid was used rather than the now common Formic acid. Smoking of rubber which is the common practice now, had yet to be introduced. Similar is the case with sheeting rubber with rollers. The rubber was marketed after sun-drying in the form of 'rubber biscuit'.

Plantation workers:

By 1910 there were about eight thousand workers in rubber plantations in and around Mundakayam. A post office, a dispensary and a police out-post were set up in Mundakayam at the instance of the planters. These developments transformed Mundakayam from a slumbering village into a bustling town. The wages of workers in plantations were six annas

initiative mainly came from the planters of Malaya since they had the biggest stake in rubber. The planters and the Government of Malaya were able to persuade the United Kingdom Government to find a solution for the low prices. Accordingly a Committee headed by Sir James Stevenson was appointed by Winston Churchil, the then Secretary of State for Colonies. The Stevenson Committee issued two reports. According to the Committee, exports were to be limited to a prescribed percentage of the standard production of each producing country. With certain qualifications the quantity of rubber produced by an estate in the year ending October 1920 was regarded as its production. A prohibitive scale of export duties was imposed on exports exceeding the percentage. The recommendations of the Committee were applicable only to Ceylon and Malaya. The Stevenson restriction scheme was not very successful. The Scheme was modified more than once and it was finally terminated on 31 October 1928.

6. RUBBER DURING THE GREAT DEPRESSION

Since India was not covered by the Stevenson Restriction Scheme, there took place an increase in the planted area and production between 1925 and 1928. Table 11 shows the growth of planted area during that period.

The increase in the area under small holdings had been a notable development during the period. The increase was about two hundred per cent over that of 1925. In the case of estates it was about thirty per cent. The highly remunerative price prevailing at that time was the major reason for the growth.

The export of rubber during the period 1922 to 1933 is given in Table 12. The table would show that exports were increasing gradually till 1931. The years 1932 and 1933 saw the lowest quantity of export from India. The Great Depression was the reason for this decline in the export.

TABLE – 11

INCREASE IN THE AREA UNDER RUBBER 1925–1928 (IN HECTARES)

YEAR	ESTATS* (40.47 hectares and above)	SMALL HOLDINGS* (Less than 40.47 hectares)
Planted earlier than 1925	22145	6782
In 1925	335	1614
In 1926	2564	6909
In 1927	2291	2855
In 1928	967	1391

Source: Madhava Menon, P., Op. cit., *p.* 98.
(Converted to hectares)

* *The definitions of estate and small holding were different at the time of Plantation Inquiry Commission. The definitions were later changed. In this connection please see Chapter I: Definitions.*

TABLE – 12

EXPORT OF RUBBER FROM INDIA

(IN M. T)

YEAR	QUANTITY	YEAR	QUANTITY
1922	4979*	1928	7316
1923	3861	1929	8027
1924	4572	1930	6909
1925	6401	1931	5487
1926	6604	1932	1118
1927	7112	1933	1422

* Includes Burma also.

Source: Knorr, K. E., *World Rubber and its Regulation*, Stanford University Press, Stanford, California, 1945, p. 248.
(Converted to metric units.)

South India. The first meeting of the Committee was held on 28 May 1934. The Committee appointed P. Kurian John as the Rubber Controller. The Committee resolved that from I June 1934 no rubber could be exported from India without a licence or accompanying a certificate of origin. The Indian Rubber Licensing Committee was constituted under the Indian Rubber Control Act 1934. The legislation was brought into force by the Government of India to enable the country to implement the provisions of the International Rubber Regulation Agreement. The Committee undertook the assessment of individual quota for estates on the basis of production records. However in the case of small holdings, the absence of reliable records presented difficulties and often the assessment had to be made summarily in accordance with assessment rules.

The IRRA originally provided for a duration of control from 1 June 1934 to the end of 1938. It was renewed in 1937 with minor modifications of its provisions for a five year period ending 1943. For a few months the Agreement was extended for establishing a non-regulatory organization covering major producers and consumers of rubber. The Agreement was finally terminated on 30 April 1944. Table 14 shows the amended basic quota of India and the actual export during 1938–1943.

TABLE – 14

EXPORT OF INDIA AND THE QUANTITY EXPORTED

(IN M. T)

YEAR	EXPORT QUOTA	QUANTITY EXPORTED
1938	13209	8128
1939	17781	9856
1940	18035	13209
1941	18035	4164
1942	18035	..
1943	18035	..

Source: Knorr, K. E., Op. cit., P. 132. (Converted to metric tonnes.)

The International Rubber Regulation scheme was in operation in India from 1934 to 1942 only. Under the Agreement, quota for export was fixed as a percentage of standard output. The determination of the standard output varied from time to time. The performance of estates and small holdings during the period had been examined in detail by the Plantation Inquiry Commission. The Commission observed that:

> "The larger estates were able to increase their output owing to their better resources but small growers had various difficulties in doing so. Hence a larger quota for export was available for the former. Further the coupons for exporters were transferable and small holders found it profitable to sell them to dealers who were qualified to buy them when they were also owners of rubber areas and also to big producers. Small growers who were not alert and assertive could not get their standard output fairly assessed.... Thus the control did not give the small holders any benefit from increased yields and areas as compared with big producers," 54

As a result the area planted by small growers was less than that of estates during the period. Table 15 shows the position.

TABLE – 15

PLANTING OF RUBBER BETWEEN 1935 TO 1942

(IN HECTARES)

YEAR	ESTATES (40.47 hectares and above)	SMALL HOLDINGS (Less than 40.47 hectares)
1935	38	1
1936	255	2

(Contd.) p. 48

54. *Madhava Menon, P.*, Op. cit., *p.* 99.

1937	512	18
1938	654	65
1939	1146	480
1940	942	553
1941	543	319
1942	1395	997
TOTAL	5485	2435

Source: *Madhava Menon P.*, Op. cit., *p.* 99.

7. DEVELOPMENTS DURING THE SECOND WORLD WAR

During the first eight years of its inception, the Indian Rubber Licensing Committee was mainly concerned with restriction of export of rubber. By 1942 the situation in India had changed drastically. The conquest of Malaya and other South East Asian countries by Japan left the Allied Nations with India and Ceylon for obtaining rubber. This situation brought about a complete transformation in the prospect of rubber in India. In 1942 the internal demand for rubber was such that a Rubber Conference was held in New Delhi on 27 January 1942 to discuss the utilisation of rubber for war-purposes. After the Conference, the Government of India issued the Rubber Stocks (Control) Order under which the estates, dealers and manufacturers were required to submit returns of stooks to the Rubber Controller or the Supply Department of the Government of India as the case may be. The Order was published in a Gazette of India Extra-Ordinary dated the 20 February 1942. Through a Press Communique the Government of India also mentioned the possibility of requisitioning rubber stocks at fixed prices.

The meeting of the Indian Rubber Licensing Committee held on 27 February 1942 considered the practical working of the new scheme and a procedure was laid down for its smooth functioning. The Committee also recommended for adoption by the Government, prices for the various grades of rubber. This was the first official fixation of prices for natural rubber in India. In 1942, the State Governments of

Travancore, Cochin and Mysore passed Rubber Control Orders in conformity with the Order of the Central Government.

The meeting of the Indian Rubber Licensing Committee held on 19 September 1942 considered the Central Government's intention to hold the Second Rubber Conference on 28 September 1942. The Committee also discussed the outline of the 'Rubber Purchase Scheme'. The Committee thought that the Government had no intention in interfering with the actual production of rubber on estates and that control operations would commence only on the arrival of rubber at centres from where despatch to manufacturers was possible. The Committee wished that the Rubber Purchase Office would be opened only at Cochin. Meanwhile the Government of India by a notification dated 5 September 1942 converted the maximum prices of rubber into fixed prices and made the violation of prices an offence punishable under the Defence of India Rules. On 23 November 1942 the Government of India issued the 'Indian Rubber Control and Production Order 1942'. Section 34 of the Order cancelled the previous Rubber Stocks Control Order 1942, the Rubber Control Order 1942 and the notification of the Government of India dated 5 September 1942. The Government also appointed C. P. Liston as the Rubber Purchasing Officer at Cochin. The Government of Travancore, Cochin and Mysore also issued separate notifications in conformity with the Government of India notification to carry out rubber control in their respective States. With the notification, the name of the Licensing Committee was changed into Rubber Production Board. The first meeting of the Rubber Production Board was held on 7 December 1942. Sir C. P. Ramaswamy Iyer, the then Dewan of Travancore was the first Chairman of the Rubber Production Board.

Under the Rubber Control and Production Order, all restrictions imposed on planting of rubber were removed and the rubber growers were encouraged to maximise production. As a result there occurred between 1943–1946 the largest increase in planted area in any similar four-year-period after 1926.

On 30 September 1946 the Rubber Control and Production Order expired. However the rubber growers who knew that with the expiry of the Order, the assurance of a steady price and regulated growth would be affected, had in the meanwhile convened a conference at Coimbatore on 28 June 1946. The Conference discussed the situation and by a majority decision, recommended to the Government of India that when the Rubber Production and Control Order expired, a permanent organization should be set up to develop plantation industry in India on scientific lines. On the basis of the recommendation of the growers, the Government of India enacted the Rubber (Production and Marketing) Act 1947. The Bill received the assent of the Governor General on 18 April 1947 and became law in the same year. The Act was amended in 1954 and 1960. By the 1954 amendment, the Central Government was empowered to appoint a full time Chairman and the name of the Board was changed from the Indian Rubber Board to the Rubber Board. By an amendment of the Act in 1960, the collection of rubber cess was shifted from the producers to the manufacturers.

8. STRUCTURAL CHANGES IN THE INDUSTRY SINCE INDEPENDENCE

In 1949 the area under rubber in India was 67,915 hectares. Table 16 shows the distribution of area.

TABLE – 16

DISTRIBUTION OF AREA UNDER RUBBER IN INDIA IN 1949

SIZE OF ESTATES/ HOLDINGS	NUMBER	AREA (Hectares)	PERCENTAGE TO TOTAL AREA
Estates above 40 hectares	249	40933	60.27
Estates between 20 hectares and upto and including 40 hectares	198	5392	7.94

(Contd. p.51)

Holdings above 4 hectares and upto and including 20 hectares	1277	9802	14.43
Holdings of above 0.40 hectares and upto and including 4 hectares	9703	11228	16.53
Holdings of 0.40 hectares and below	2416	550	0.83
TOTAL	13843	67915	100.00

Source: Rubber Board, Kottayam, S. India. (Converted to hectares)

From the table it can be seen that 60.27 per cent of the total area was owned by estates of forty hectares and above at that time. The estates of between twenty hectares and forty hectares accounted for 7.94 per cent of the total area The total area of small holdings of twenty hectares and below was 31.79 per cent.

The geographical distribution of rubber area in India in 1949 is given in Table 17. From the table it can be seen that the erstwhile Travancore State had 72.85 per cent of area under rubber. If Travancore, Cochin and Madras are taken together, the percentage would be 97.59.

TABLE 17

GEOGRAPHICAL DISTRIBUTION OF RUBBER AREA IN INDIA (1949)

STATE	NUMBER OF EASTATES AND HOLDINGS	AREA (Hectares)	PERCENTAGE TO TOTAL AREA
Travancore	13427	49476	72.85
Cochin	192	5564	8.19
Madras	208	11241	16.55
Coorg	8	1293	1.90

(Contd. P. 52)

Andamans	1	165	0.25
Mysore	6	156	0.23
Assam	1	20	0.03
TOTAL	13843	67915	100.00

Source: Rubber Board, Kottayam. S. India.(Converted to hectares.)

Changes in different size groups:

The subsequent developments in the rubber plantation industry are presented in Annexures I. and II. Annexure II shows the area in each size-group unedr small holdings (twenty hectares and below) and estates (above twenty hectares) at the interval of five years, beginning from 1955-56. Annexure I shows that the percentage share of area under small holdings has increased from 43.27 in 1955-56 to 70.25 in 1974-75. During the twenty year period (1955-56 to 1974-75) the area under small holdings increased by 328.33 per cent. During the same period the area under estates declined from 56.73 per cent to 29.75 per cent. The increase in the total area under estates was only 38.36 per cent during the same period. Annexure I also shows that there had been increase in the percentage area under all size-groups of small holdings although the increase is pronounced in the size-group two hectares to four hectares. In the estate sector, the percentage share of all size groups except that of eight hundred hectares and above has fallen. However there is only a marginal increase in that size-group from 7.03 per cent in 1955-56 to 7.44 per cent in 1974-75.

Annexure II shows the increase in the number of units over the twenty year period. It can be seen from Annexure II that there is only a small change in the percentage share of different size-groups of small holdings. There is a slight decrease in the percentage share in the size-group, four to twenty hectares, while there is a small increase in other size-groups of small holdings. In the estate sector there is a decline in all the size-groups except the size-group, six hundred to eight hundred

hectares where the percentage is almost stationary. During the twenty year period the number of small holdings increased by 377.15 per cent while the number of estates increased by 37.44 per cent only.

Annexure III presents the annual percentage increase in the number of units and area under small holdings and estates. It can be seen from the Annexure that the largest increase in small holdings took place during the period 1955–56 to 1959–60. This was partly due to the fact that during these years agrarian reforms were on the anvil. The legislation had proposed to exempt rubber and other plantation crops from the purview of land–ceiling. Accordingly there was a rush to convert other areas into rubber. The trend is seen in 1961–62 also. During the period 1967–68 to 1969–70 there was considerable increase in the area under small holdings. This was partly due to the cash subsidy scheme introduced by the Rubber Board for small rubber growers. Under the scheme, one hundred and seventy–five rupees per hectare was paid as subsidy to all small rubber growers owning upto two hectares and one hundred and fifty rupees per hectare to small growers owning above two hectares and upto four hectares of rubber area. Naturally those small rubber growers who had until then not registered their rubber area with the Rubber Board came forward to register their area so as to avail themselves of the facility. Other reasons that can be attributed for the increase in the small holding area and number are the pressure of population in the State of Kerala, the inheritance law which enjoins the parents to divide the land among children, the various incentives and assistances given by the Rubber Board to small rubber growers, the implementation of the Plantations Labour Act, 1951 which does not apply to holdings below 10.117 hectares and the differential slab rates and exemptions provided under the Agricultural Income Tax Act of Kerala.

The major increase in the area under the estate sector took place during 1965–66. This was partly due to the

fact that the plantations started by the Governments of Kerala, Tamil Nadu and Karnataka were expanded during the years. The increase in the area of estates during the years 1960–61 and 1961–62 was due to the fact that during those years the nucleus for public sector plantations was started. In November 1962 the Government of Kerala registered a Corporation known as the Plantation Corporation of Kerala, Ltd. The Corporation took over the departmental plantations set up by the Government already and expanded the area. In Tamil Nadu and Karnataka it was the forest Departments which took to rubber cultivation. Experimental plantations had been established by the Governments of Assam, Tripura, Andhra Pradesh, Goa and Meghalaya. Andaman and Nicobar Islands had been another area where Government plantations have been developed since 1965.

The average annual increase over the twenty year period is also presented in Annexure III. The average increase in area per year was 10.41 per cent in the small holding sector and 1.66 per cent in estates. The total average increase in area was 5.89 per cent per annum.

Geographical distribution of rubber area in India:

The geographical distribution of rubber area has not changed much over the years. As can be seen from Table 17, rubber was cultivated mainly in Travancore, Cochin and the Malabar district of Madras State in 1949. These areas almost together formed the Kerala State and even after about twenty years, rubber still centinues to be concentrated in that State. It is true that small areas have come up in Maharashtra, Goa, Tripura and Andhra Pradesh after Independence. However there is a slight increase in the percentage share of Karnataka and Tamil Nadu while the share of Kerala has slightly declined. The percentage share of area in Kerala declined from 94.20 in 1957–58 to 91.44 in 1974–75. The share of Tamil Nadu increased from 4.14 to 5.18 per cent and that of Karnataka from 1.50 to 2.96 per cent during the same period.

Changes in ownership:

In 1952–53 there were 149 estates owned by limited companies. These companies occupied 66.02 per cent of the total area under estates. In 1972–73 the area under that category had fallen to 44.54 per cent (both public and private limited companies) of the total. The data show that much increase has come about in Government-owned plantations. The percentage which was only 0.07 in 1952–53 had increased to 23.06 in 1972–73. In the small holding sector similar figures are not available. However out of the total number and area of small holdings, those belonging to limited companies are very negligible as it used to be at the time of Independence. The vast majority of small holdings are owned by individuals.

9. OTHER ASPECTS OF RUBBER PLANTATION INDUSTRY

Production and Productivity:

The rubber plantation industry has made much strides since Independence. The production of natural rubber which was only 15,394 tonnes in 1948–49 increased to 130,143 by 1974–75. Similarly the yield per hectare which was only three hundred and twenty kilograms in 1948–49 increased to seven hundred and sixty–two kilograms by 1974–75. The yield per hectare was lower in Karnataka (544 kilograms) while it was higher in Tamil Nadu (942 kilograms) in 1974–75. The yield per hectare was seven hundred and fifty–five kilograms in Kerala during the same year.

The production of natural rubber has not been sufficient to meet the internal demand till very recently. Hence it had been imported from abroad since Independence till 1973–74, when India was able to export some quantities due to a temporary surplus. India has a synthetic rubber factory with a rated capacity of thirty thousand tonnes per annum. About fifteen to twenty per cent of internal rubber consumption is met from synthetics.

During the period 1940 to 1950 the production of natural rubber in India remained more or less static at about 16,000 tonnes per annum. During the year 1950–51 the production of natural rubber was 15,830 tonnes of which 3,387 tonnes were produced in the small holdings (21.40 per cent). The share of small holdings increased rapidly with the increase in their area and reached 79,260 tonnes (60.90 per cent) out of 130,143 tonnes produced in 1974–75. The details are shown in Table 18.

TABLE – 18

PRODUCTION OF NATURAL RUBBER FROM HOLDINGS AND ESTATES

(IN M. T)

YEAR	PRODUCTION OF SMALL HOLDINGS	PERCENTAGE	PRODUCTION OF ESTATES	PERCENTAGE	TOTAL
1950–51	3387	21.40	12443	78.60	15830
1960–61	6528	25.40	19169	74.60	25697
1965–66	20424	40.42	30106	59.58	50530
1970–71	51538	55.91	40633	44.09	92171
1971–72	57630	56.94	43580	43.06	101210
1972–73	66247	58.96	46117	41.04	112364
1973–74	75331	60.19	49822	39.81	125153
1974–75	79260	60.90	50883	39.10	130143

Source: Rubber Board, Kottayam, South India.

Comsumption:

Before the Second World War, natural rubber produced in India was almost entirely, exported although a small rubber goods manufacturing industry had been in existence in the country since 1920. The first rubber factory, the Bengal Waterproof Ltd., had been set up in Calcutta by that time. Around 1930, M/s. Dunlops and Batas both in Calcutta, started functioning, After the conquest of Malaya and the East Indies by Japan during the early years of the

War, the position and prospect of the industry were transformed drastically. The war efforts encouraged the infant Indian rubber goods manufacturing industry to produce more rubber goods. This changed the position of the country from an exporter of natural rubber to an importer. The launching of the Five Year Plans found the country importing more and more rubber to meet the internal demand.

Immediately after Independence small quantities of natural rubber were being exported. However export of natural rubber ceased by 1956–57 but resumed after about two decades, in 1972-73. Table 19 shows the production, import, export and consumption of natural rubber at the interval of five years.

Though around ninety per cent of natural rubber is produced in the State of Kerala, the State accounted only for 7.31 per cent of natural rubber consumption in India in 1974–75. Out of the 1648 rubber goods manufacturers in India in 1974–75, only 191 were in the State. The largest number of rubber goods manufacturers was in Maharashtra, followed by West Bengal. In regard to consumption of natural rubber, Maharashtra stood first in 1974–75. However, till 1973–74, West Bengal had been the leading State. The consumption of these two States were 24 and 23.86 per cent respectively in 1974-75. Tamil Nadu was the third in respect of consumption, accounting for 19.48 per cent during that year.

TABLE - 19

PRODUCTION, IMPORT ,EXPORT AND CONSUMPTION OF NATURAL RUBBER (IN M. T)

YEAR	PRODUCTION	IMPORT	EXPORT	CONSUMPTION
1950-51	15830	4170	964	19854
1955-56	23730	4428	12	28445

(Contd. P. 58)

1960–61	25697	23125	Nil	48148
1965–66	50530	16357	Nil	63765
1970–71	92171	2469	Nil	87237
1974–75	130143	Nil	350	132604

Source: Rubber Board, Kottayam, South India.

Price and Price fixation:

The marketing of rubber in India was more or less free till 1942. The year 1942 was a turning point for the industry. Under the Rubber Control and Production Order, raw rubber was brought under price control in 1942. Since then control on price has been in existence almost uninterruptedly. The first fixation of price came into being in 1942. That price continued during the Second World War. The fixation of price was statutorily provided in the Rubber Act 1947. Under the Act, the Government of India could fix both minimum and maximum prices for various grades of rubber. The fixation of rubber prices had been undertaken by the Tariff Board or its successor the Tariff Commission. Since 1947 till 1974–75 rubber prices have been fixed or revised fifteen times.

The Rubber Board and its activities:

The Rubber Board was constituted under the Rubber Act 1947 to promote by such measures as it thinks fit the development of the rubber industry in India. The Rubber Board is functioning under the Ministry of Commerce of the Government of India. The Board has a full–time Chairman appointed by the Government of India. In addition to the Chairman, there are twenty–four other members in the Board. The organization of the Rubber Board consists of three departments: Administration, Rubber Production and Research. The Rubber Research Institute of India which is the research wing of the Rubber Board, undertakes research on rubber. The implementation of various schemes of the Board for development of the industry is the responsibility of the Rubber Production Department. The Rubber Production Commissioner is an ex–officio member of the Rubber Board. The main

schemes of the Rubber Board are the Replanting Subsidy Scheme, the New Planting Loan Scheme, distribution of planting materials to small growers at concessional rate, distribution of spraying materials to small growers at subsidised rate, distribution of manure at subsidised rate to certain class of small growers and various assistances and facilities to co-operative societies for the benefit of rubber grower members. Under the leadership and control of the Rubber Board the rubber plantation industry has made all round progress during the last three decades.

10 CONCLUSION

We have seen from the foregoing review that rubber was not a native of India. Like many other crops it was introduced by the then Imperial Government. Though the initiative came from the Government of India, the development lagged behind that of Malaysia and Sri Lanka. This was attributed to the unimaginative attitude of the forest officials who were entrusted with the task of introducing it.

With the enormous increase in the price of rubber in the early years of the century, the initiative for establishing rubber plantations passed on to the European planters who had considerable experience in developing tea and coffee plantations. The exmple of European planters was emulated by their Indian counterparts. The influence of the *Malayala Manorama*, a by-weekly local news journal in stimulating the interest of the Indian planter has to be particularly mentioned in this connection.

The prosperity of the early years of the century was followed by the depression in the thirtees. This led to great financial loss to the planters and it was felt that only an international joint effort could alone solve the problem. It was as a result of such effort that the International Rubber Regulation Agreement came into being. For implementing its regulations at first a Committee and later a Board came into existence. Although the Second World War was a catastrophe for world peace, it augured well for the

rubber plantation industry. Soon after the War, a separate legislation was enacted by the Government of India to give lasting effects to the regulations and to modernise the industry on a planned basis. The Rubber Board was the organization charged with the task. Under its leadership and guidance, the Industry has during the last three decades registered allround progress.

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CHAPTER – III

PLANNING IN RUBBER PLANTATIONS

1. IMPORTANCE OF PLANNING IN THE MANAGEMENT OF RUBBER ESTATES

Planning is fundamental to management and the management of plantations is no exception to the rule. According to one author planning is the "conscious determination of courses of action."[55] In the words of another, a plan is a "statement of objectives to be attained in the future and an outline of the steps necessary to reach them". [56] The purpose of planning is to obviate uncertainty.

The extent of planning has to be much more in plantation than in a manufacturing firm. This was evident in the course of the fact-finding-survey which the author conducted. Many companies prepare a master-plan for the whole organization and then allow subordinate units considerable freedom of operation within the limits of the master-plan. Two Indian and two non-Indian rubber companies have been adhering to this practice of preparing master-plans. These companies control a number of estates. In addition to the master-plan for the whole organization, each estate has also been preparing a separate plan.

Forecasting has an important place in the planning of operations in the estate. Forecasting would involve the collection of data from the estate so as to analyse them

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55. *Harold Koontz and Cyril O' Donnell*, Principles of Management: An Analysis of Managerial Functions, *McGraw-Hill Kogakusha, Ltd., Tokyo*, 1972, *p.* 113.

56. Ernest Dale, Management Theory and Practice. McGraw-*Hill Kogakusha, Ltd, Tokyo*, 1973, *p.* 300.

intelligently with a view to taking appropriate decisions. The simple method of forecasting is the trend-extrapolation. With the development of very high yielding planting materials in the recent past, forecasting has acquired a vital role in the management of rubber plantations. Forecasting of yield will enable the estate manager to take such important decisions like the future expansion of the factory, replanting and new planting programme [57] and important constructions.

Budget is the common form of plan that is generally found in the estates. Budgets are "statements of plans in quantitative terms as well as standards against which performance can be measured."[58] It is also a control device. As a control device, it ensures how well a job is done, what progress has been achieved toward the goal and the deviation if any from the desired path. There are different types of budgets.

2. PLANNING IN A RUBBER ESTATE

Rubber is a perennial crop. Its economic life is about thirty years after planting. Therefore a high degree of planning is necessary for the development of a rubber estate. The sequences of planning in the estate can be grouped into three phases which closely correspond with the cycle of operations in the estate. The operations are:

(1) planning for immature rubber (before bearing)
(2) planning for mature rubber (after bearing) and
(3) planning for replanting.

57. Replanting and new planting: *Replanting is the replacement of existing rubber trees with high yielding ones, when they become uneconomic or old. The Rubber Board grants a subsidy for the purpose. Replanting is different from new planting. The latter means the planting of rubber in an area where there was no rubber previously.*

58. *Morris. E. Hurley,* Business Administration, *Prentice-Hall of India, Pvt. Ltd., New Delhi,* 1964, *p.* 402.

Planning for immature rubber:

The selection of suitable land is the first step in the development of estate. Rubber grows on many types of soil provided the soil is deep and well drained. A warm, humid and equable climate and fairly distributed rainfall are necessary for optimum growth of the rubber tree. The rainfall should not be less than two hundred centimetres per year and such areas should be first identified. Data on rainfall and temperature may be relied upon for the selection of site. Since the ideal land may be diffficult to locate in many parts of India, an absolutely rational decision may not be possible in this regard.

After the selection of land the choice of planting material will arise. Rubber tree is propagated by seeds and budgrafted planting material. [59] All earlier plantations were raised from unselected seeds and the yield was generally poor in many cases. However new methods of selection and the introduction of budding resulted in the development of high yielding planting materials. Hence the initial plan should aim at the selection of the best planting material suitable for the area. The decision can be taken after examining the performance of different planting materials. The other important factors to be examined are the vigour of growth, resistance to diseases, drought and wind, early maturity, cost of cultivation and maintenance.

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59. Budgrafting: *"The operation of budgrafting consists of insertion of a strip of bark containing a bud under the bark of young seedling. When the tissues of the bud-patch and the seedling have become firmly united–3 to 4 weeks after budgrafting – the seedling stem can be sawn off above the grafted bud which then grows out to form the new plant with the characters of the parent from which the buds were taken."* (Rubber Growers' Companion, *Rubber Board, Kottayam, S. India*, 1977, *p.5*)

After the selection of planting material, the next step should be the establishment of the nursery. The nursery is intended for raising healthy planting materials rapidly. Regular weeding, applying proper manuring and adopting disease control measures are essential for optimum growth of planting materials in the nursery. Mulching [60] is also an important cultural operation to be practised in rubber nurseries.

The plan should give the details of operations necessary for planting. If the land selected is in a forest area, clearing of trees of economic value should be attempted first followed by felling of smaller trees and removing the undergrowth. Timing of these operations is important for obtaining reasonable price for the felled trees. If the trees are left to rot for long, they may not fetch any income. The clearing operations should begin sufficiently in advance to avoid delay in planting. In South India, June/July is the best season for planting.

The next operation which should find a place in the plan is lining. Correct lining is important not only for optimum utilisation of land but also for facilitating proper tapping of rubber trees after they reach the bearing stage. If the land is flat or slightly undulating, square or rectangular lining can be adopted. However contour lining is made in undulating and hilly areas. Planting distances vary according to the type of material used. Steps should be taken for soil conservation in advance. In hilly areas terracing and in low lying areas providing drains are essential for soil conservation. Silt pitting is practised on undulating land to check soil erosion. Constructing level contour stone terraces will check the surface run off by allowing the water to filter through the terraces.

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60. Mulch: *"A natural or artificial applied layer of plant or other materials over the surface of the soil to conserve soil moisture and prevent rise in temperature."* (Ibid., p. 77.) *The application of mulch is called 'mulching'.*

When clearing is sufficiently advanced, pitting can be started. Pits provide favourable condition for early establishment and growth of young plants. The size of the pit depends upon the type of planting material. Planting can then take place with germinated seeds or seedlings or budded plants raised in the nursery.

Raising cover crops, applying fertilisers and undertaking plant protection measures at appropriate time are the other important operations to be carried out during the immature period of rubber tree. Proper planning of these operations with a view to the optimum utilisation of men and materials is necessary. Soil and leaf analyses can be made to rationalise the consumption of fertilisers.

Planning for mature rubber:

Maturity starts when the rubber tree reaches the tapping stage. Before the commencement of tapping a lot of planning is required. When seventy per cent of rubber trees attain the minimum required girth, and height,[61] they are ready for tapping. Such trees are marked for tapping. The question of fixing the tapping task[62] is also important.

There are different types of tapping systems with varying intensities.[63] The question of fixing rainguard

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61. Girth and height: *The criterion for opening rubber tree for tapping is at 55 cm. girth at the height of 50 cm, from the ground level in the case of seedling trees. For budded trees, the standard is 50 cm. girth at a height of 125 cm. from the bud union.* (Ibid., p. 33.)
62. Tapping task: *Tapping task is the number of rubber trees tapped by a tapper in a day. In India, the tapping task is usually about* 250 *to* 300 *trees* (Ibid., p. 78.)
63. Tapping system: *The tapping system recommended for clonal seedlings is half spiral every third day. The notation used is : s/2 d/3 which is equal to* 67% *tapping intensity. For budded trees half spiral every second day is recommended. The notation is : s/2 d/2 which is equal to* 100% *tapping intensity.* (Ibid., p.34.)

[64] for tapping during rainy days and the additional yield that will accrue from it should be examined in advance.

The most important aspect requiring planning at this stage is the choice of the final product. Though rubber is obtained from the tree in the form of a liquid called latex, only a small percentage of total rubber produced in the country is sold in that form. Even that is done after preserving or preserving and concentrating.[65] heT purpose of concentration is to reduce the bulk and thereby facilitate easy transportation. Nearly two thirds of latex consists of water and latex will coagulate when kept for a long time. The quality of latex also will deteriorate unless it is preserved or concentrated. Further, all rubber growers do not have the necessary facilities or the technical competence to do the same. In addition, preserved or concentrated latex has only limited demand. The bulk of rubber therefore is

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64. Rainguard: *It is a polythene sheet fixed to the trunk of the rubber tree above the tapping panel. It enables to continue tapping during rainy season.* (Ibid., *p.* 35.)

65. Preserving and concentrating: *A preservative is a chemical or mixture of chemicals which when added to latex can prevent bacterial action in it and at the same time stabilise it. Ammonia is the most popular latex preservative. Preserved latex is concentrated mainly by three methods*: (1) *concentration by evaporation* (2) *concentration by creaming* (3) *concentration by centrifugation. In India the bulk of the concentrated latex is produced by the last method. Preserved latex concentrates are generally marketed in two concentrations*: (1) *latex between* 36 *to* 50% *d. r. c. and* 51 *to* 60 % *d. r. c.* (Ibid., *pp.* 39–42).

sold in the form of sheet or crepe.[66] Of late technically specified solid block rubber [67] is also being marketed. But it forms only a small percentage of the total rubber production.

66. Sheet rubber: *Latex is coagulated by adding Formic or Acetic acid in suitable containers to obtain slabs of coaguium and passed through a set or grooved rollers to obtain ribbed sheet rubbers. Depending upon the drying method, sheet rubbers are classified into ribbed smoked sheets or air dried sheets. To obtain smoked sheets the sheets after two or three hours of dripping in shade are put in the smoke house for drying for four days.* (Ibid., *pp.* 42–44.)

    Crepe rubber: *When coagulated latex or any form of scrap rubber is passed several times through a minimum of three mills with heavy rollers, crinkly lace–like rubber will be obtained. This rubber when air–dried is called crepe rubber. There are different types of crepe rubbers depending upon the materials from which they are manufactured. These are: Pre–coagulated crepe rubber, Sole crepe, Pale latex crepe, Estate brown crepe, Remilled crepe, Smoked blanket crepe, and Flat bark crepe.* (Ibid., *pp.* 46–47.)

67. Solid block rubber: *Dry ribbed sheet rubbers and the various forms of crepe rubbers were found to be ineffective to compete with technically specified synthetic rubbers which started coming into the world market in solid form well–packed after the fifties. So attempts were made mostly in Malaysia during the last decade to develop new methods of processing and presentation of natural rubber. As a result several methods of processing rubber into solid block forms which facilitate technical specification were evolved. The tests to find out dirt, ash, volatile matter, nitrogen, copper and manganese contained in rubber are undertaken along with its plasticity retention index. Based on the test results, the grading is made. The bales are then wrapped in polythene films and packed in pellets and marketed.* (Ibid., *pp.* 47–48.)

The choice of processing method will depend upon a number of factors. The most important factor is the estimated production of latex that will be obtained when all the trees in the estate reach the yielding stage. The selected method should enable the processing to be carried out economically. The investment capacity of the planter is another factor. The investment required for various types of processing units would be different. Availability of technically qualified personnel is also an important factor. Certain processes require careful control of operations and laboratory tests for which technically qualified personnel should be available. The present and future demands for different forms of rubber should also be taken into account before arriving at a decision.

Under the Rubber Act an estate can sell rubber either to a dealer or a manufacturer. There are certain advantages in the direct sale to manufacturer. It should therefore be a planning decision whether the crop should be sold to the dealer or manufacturer.

Providing fire protection belts to the estate also should be a part of planning. A fire belt is a clean-weeded strip of land without any plantation encircling the field. The belts can minimise the damage to the estate in case of an occurrence of fire by preventing its spreading from one field to the other. Fire watchers can also be posted at vulnerable points during the dry season.

It is also a good practice to decide in advance about the plant protection measures to be undertaken. Spraying fungicides against abnormal leaf fall disease is a common practice in the estates. Therefore a decision has to be taken in advance whether helicopter or other methods of spraying should be undertaken in the estate. This will depend upon the size of the estate and its location. If the estate is located in a plantation belt, helicopter spraying may be desirable even if the estate is small. For helicopter spraying, a helipad will have to be provided. If advance planning is made, an area can be earmarked for the purpose.

Planning for replanting:

The concept of planning has its full application in relation to replanting of rubber plantation. Since the economic life of the rubber tree is about thirty years, a phased programme of replanting will ensure continuous viability, uninterrupted production and regular income. If the entire estate is replanted, income from the estate will be stopped. It will also lead to retrenchment of labour and consequent problems. Large estates therefore undertake a phased programme of replanting of about three per cent of rubber area every year. This would ensure that at any point of time seventy-five to eighty per cent of total area under rubber will be in tapping. This calculation is based on the seven year immaturity period. If the immaturity period is only five years, as in the case of certain planting materials, the percentage of area under tapping will be more.

Before launching a replanting programme, certain amount of planning has to be undertaken. The proposed area will have to be earmarked for intensive tapping. Intensive tapping is generally carried out on old rubber trees prior to removal. The method adopted for intensive tapping depends upon the condition of the trees, the tapping system followed, the remaining bark on the tree and the time available before the felling of rubber trees. If there is proper planning the earnings from intensive tapping can be increased. Increasing the frequency of tapping, extension of tapping cut, opening double cuts and using yield stimulants[68] are the methods adopted for intensive tapping. If the frequency of tapping is once in three days, it could be changed to every second day or every day. The size of tapping cut is usually half spiral. This can be changed to full spiral, when intensive tapping is adopted. Opening double-cut may nec-

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68. Yield stimulant: *Certain chemicals when applied below or above tapping cuts are capable of enhancing latex yield. The best known yield stimulant is Ethrel.* (Ibid., *p.* 35.)

essitate the use of laddar for tapping. [69] Adoption of these methods of tapping would require planning sufficiently in advance since tappers will have to be redeployed in the area. Use of stimulants is a common practice adopted for increasing yield on the eve of slaughter tapping. [70] A number of yield stimulants are now available.

The plan of operation for newplanting and replanting is more or less similar. An existing estate undertaking replanting will possess more data to decide on the best plantng material than a new estate. If proper planning is adopted, the planting materials required for replanting can be obtained from the estate itself. A replanted area will require less workers for employment and therefore proper planning would facilitate their re-deployment.

Planning of day-to-day operations:

Legislative enactments impose considerable responsibility on the plantation manager regarding labour welfare. Therefore workers who cannot be fully employed will be a burden on the estate. This will in turn reduce the profit of the estate. As labour-cost forms about fifty per cent of the total cost of production in an estate, proper utilisation

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69. Ladder tapping: *When tapping of renewed bark on lower panels becomes uneconomic, new cuts are opened at higher levels, i. e.* 139 *to* 180 *cm. from ground level or even higher. The tapper uses a light wooden or aluminium ladder to reach the cut. Since ladder tapping is more strenuous and time consuming, usually reduced tapping tasks are given* (135 *trees*) *(Ibid p.35)*

70. Slaughter tapping: *The term is used to indicate the all out bleeding of the rubber tree to obtain the maximum yield without regard to the welfare of the tree. This is adopted one or two years before replanting or replacement with other crops. The length, height and frequency of tapping are all increased.* (Ibid., *p.* 78.)

of labour force would call for the best of planning abilities of the manager. Therefore the day-to-day operations of the estate will have to be planned in advance so that each operation will clearly follow the other. In addition to day-to-day operations, there are certain operations to be undertaken once or twice in a year. The main such operations are:

(1) marking for tapping
(2) fixing spouts
(3) applying panel protectants [71]
(4) white-washing young rubber trees against sun scorch
(5) fixing rain-guards
(6) annual repair of roads, buildings, drains, terraces and fences
(7) applying fertilisers and
(8) undertaking plant protection measures.

Since recruitment of additional workers may create problems, it is necessary to plan the operations well in advance.

3. FINDINGS OF THE STUDY

Budget:

The most common form of plan in the estates is the annual budget. Where budget exists it is finalised by the company controlling the estate. It may be mentioned that three Indian estates had not formulated any budget during 1974-75. The draft of the budget is prepared by the manager of the estate. This is submitted to the managing director. The final decision is taken by the board of directors of the company. The extent of manager's participation

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71. Panel protectants: *These are chemicals used to protect the tapping panel of rubber tree from disease infection or for regeneration of bark or for both. The most common of such chemicals is Rubber kote. It is usually applied on rubber tree during summer months.*
(Ibid., *p.* 73.)

in the preparation of budget varies from company to company. This depends upon the position accorded to him by the company. If the company has only one estate, the managing director exercises more control and direction in the formulation of the budget. Annexure shows the contents of a typical annual budget. The contents of budgets are broadly the same in Indian and non-Indian estates.

Map:

All estates have some form of a map though some estates would call it a survey plan. For claiming replanting subsidy and other assistances from the Rubber Board, a survey plan has to be produced. Therefore all estates covered by the study have prepared survey plans. Table 20 gives the details shown in the maps in the estates examined for the study.

TABLE – 20

DETAILS SHOWN IN THE MAP

DETAILS SHOWN IN THE MAP	INDIAN ESTATES	NON-INDIAN ESTATES
Buildings, roods, rivers and fields	5	17
Buildings, water supply and drains	..	2
Buildings and roads	22	1
Roads and fields	2	..
Roads only	6	..
TOTAL	35	20

It would be seen from Table 20 that the contents of the map are not uniform in all estates. However all estates have noted the boundaries and survey numbers in the maps. The difference is only in respect of other details. The majority of non-Indian estates have shown the essential details.

Some maps are very old and require revision. Since a plantation will consist of a number of fields, it is necessary to show the fields also in the map for proper control. Unless there is a proper and up-to-date map of the property, it is very doubtful whether the manager will be able to identify and control the operations. This is particularly so since some estates will form a village by itself due to the size.

Methods of planning daily work:

The average size of the estates covered by the study was 379 hectares under rubber and the average number of workers employed was 285. Though the averages were for all estates, the corresponding averages for non-Indian estates were 633 hectares and 509 workers. This would show that the average size of non-Indian estates was considerably large. The larger size of the estate and greater number of workers entail that the manager should plan the daily work well in advance. Compared to an industrial undertaking the daily work will very from season to season. This is because some operations are dependent upon climatic conditions. For example, a sudden rain can postpone spraying or manuring operation and a heavy downpour can stop weeding or construction operation.

Planning of day-to-day work is also necessary because of the special nature of tapping. About forty-five per cent of work force in the estates covered by the study was tappers. Tapping is not carried out in all blocks. [72] There are

72. A block: *A block is the minimum area assigned to a tapper for tapping. It usually consists of 250 to 300 trees and is generally equal to the tapping task. A field normally consists of a number of blocks.*

mainly three frequencies of tapping: daily, once in two days and once in three days. In addition there may be certain areas which are intensively tapped. Hence proper deployment of tappers is an important day-to-day activity. This is part of the everyday planning. Daily planning is also necessary in the case of field workers who form about forty per cent of the total workforce of the estates covered by the study. Further, eighty per cent of total workers in those estates was permanent and some of them will have to be paid full wages and others fall back wages [73] if their services are not utilised. This affects the profitability of the estates. Hence from the profit angle also planning of day-to-day work is important. Table 21 shows the frequency and interval of planning of day-to-day activities in the estates covered by the study.

TABLE - 21

METHOD OF PLANNING DAILY WORK

REGULARITY OF PLANNING IN ADVANCE OF WORK		INDIAN ESTATES	NON-INDIAN ESTATES
Weekly plan	—	25	19
Ten-day plan	—	..	1
Weekly and monthly	—	1	..
Daily and weekly (not regular)	—	4	..
As and when (no plan)	—	5	..
TOTAL	—	35	20

73. Fall back wages : *Fall back wages are the guaranteed minimum wages to be paid to the workers, particularly the tappers, even if there is no work. During rainy days tapping cannot be normally carried out and fall back wages are paid during such days.*

Soil conservation:

Soil conservation is part and parcel of a well-managed estate. There are different types of soil conservation measures. Terrace construction, digging of silt pits and drains and raising cover crops are the more important measures. Construction of terraces is a common practice in Kerala. However if the land is flat, the terraces may not be necessary. Where the land is undulating, terraces have been constructed in the estates examined for the study. Silt pits have been found only in a few estates. In most estates cover crops have been raised along with young rubber. Table 22 shows the details of soil conservation methods adopted in the estates covered by the study.

TABLE – 22

SOIL CONSERVATION METHODS ADOPTED

SOIL CONSERVATION METHODS ADOPTED	NUMBER OF INDIAN ESTATES	NUMBER OF NON-INDIAN ESTATES
Terraces and cover crops	18	17
Terraces, cover crops, silt pits and drains	8	3
Terraces, cover crops, silt pits and drains	7	..
Cover crops only	2	..
TOTAL	35	20

Though pasture improvement and afforestation in the boundaries and vacant spaces of the estates are also aimed at soil conservation, these were not followed in any estate. It may however be added that though forest lands are part of certain estates, afforestation had not been practised as a measure of soil conservation in any of the estates covered by the study.

Tapping and tapping task:

Tapping is the method by which the crop of rubber called latex is collected. Tapping is started early in the morning. There is a minimum height and girth for tapping for different types of rubber trees. About seventy per cent of trees in the block should reach the minimum girth before commencing tapping. The tapping cut for budded trees should have a slope of thirty degrees to the horizontal plane and for seedlings twenty-five degrees.

The tapping method recommended by the Rubber Board for clonal rubber is half spiral once in three days and for budded tree, half spiral once in two days. However for certain varieties of budded trees third day tapping is also followed. The yield of rubber tree will vary according to planting material, age of the tree, fertility of the soil, climate and the skill of the tapper. The maximum yield will be obtained by fifteen to twenty years from planting.

A high tapping task is to the advantage of the estate. Since tapping wages form around fifty per cent of total wages in the estate, it would lead to some reduction in the wage bill and the number of tappers to be engaged in the estate. The study has revealed that the tapping task was lower in the Indian estates than in the non-Indian estates. The tapping task was three hundred trees or less in thirty-four Indian and twelve non-Indian estates. In terms of percentage, this would be ninety-seven in Indian estates and sixty in non-Indian estates. It is significant to note that there was no Indian estate with a tapping task of more than three hundred and fifty trees. In this connection it may be noted that an estate may have blocks with different tapping tasks. The range given in Table 23 indicates the maximum and minimum trees in the various tapping tasks adopted in the estate. In the Indian estates the difference between the lowest and the highest tapping tasks is much less compared to the non-Indian estates.

TABLE – 23

TAPPING TASK (1974-75)

RANGE OF TASK	INDIAN ESTATES	NON-INDIAN ESTATES
250 trees or less per tapper per day	9	1
251 to 300 "	25	11
301 to 350 "	1	3
351 to 400 "	..	2
Over 400 "	..	3
TOTAL	35	20

The increase in tapping task has been achieved by introducing more collection points and assisted collection. Assisted collection existed in six non-Indian estates. Under the system of assisted collection the responsibility of carrying latex to the weighing shed is entrusted to another person or a vehicle is provided by the estate for the purpose. As a result the tapper gets some more time to tap a few more trees. By increasing the collection points within the estate, the distance to be travelled by the tapper for weighing the latex is reduced and therefore he can tap still more trees,

In addition to the above methods, proper lay-out of the field has also led to the increase in the tapping task. There are different methods of spacing the rows of rubber trees. In certain areas a particular method of spacing will be more conducive to efficient tapping. For example by spacing 730 cm. × 300 cm. the total trees to be planted in a hectare can be arrived at 450. By spacing 610 cm. × 370 cm. also the number of trees will be 450. Depending upon the type of terrain, square or rectangular spacing can be adopted. This point has to be taken into account at the time of planning the planting operation. The best spacing from the point of view of tapping seems to be rectangular, where

the distance between the rows will be longer and between the trees shorter. There is a range of planting points that can be adopted per hectare for buddings and seedlings. The decision on spacing will have to be taken within the range.

In addition to the above, the willingness of the tapper is also a factor in the increase of tapping task. In certain estates, though the management tried to introduce assisted collection, the trade unions representing the workers were not willing to agree to the change-over. Hence the management had to adandon the proposal.

Planning incentive payment for tapping:

The concept of payment by results has been in vogue in rubber plantation industry for a long time. The details of the system are discussed in the chapter dealing with Personnel Management. It may be mentioned in this connection that some planning is involved in the implementation of the scheme of incentive payment. For the purpose of payment the fields in the estate are grouped into four classes. The classification is made on the basis of agreements concluded between employers and employees. The yield level of each class of field is given in Table 24. The method of incentive wage payment to tappers is explained in Annexure.

TABLE – 24

CLASSIFICATION OF FIELDS FOR INCENTIVE PAYMENT (1974–75)

CLASSIFICATION IN THE SETTLEMENT	YIELD LEVEL TO QUALIFY (Kg./hectare)	STANDARD OUTPUT (Kg.)
Class I	Below 279	3.71
Class II	Above 279 Upto 447	6.18
Class III	Above 447 Upto 672	11.12
Class IV	Above 672	16.06

Though four classes are accepted for payment of incentive wages in the agreement relating to wage fixation, all estates are not following the classification nor have all the scope for classifying the fields into all classes. This is because certain estates have planted low yielding materials, the yield of which will not fit into the four classes. Of the twenty non-Indian estates, all excepting one have the four classes. In one estate time-rated tappers are employed and hence the question of introducing the classification would not arise. Further the estate is also a small one and hence the scope for such classification is also less. The position of Indian estates is shown in Table 25.

TABLE - 25

TAPPING CLASSES FOR INCENTIVE PAYMENT IN INDIAN ESTATES

NUMBER OF CLASSES	NUMBER OF ESTATES
No class (Time rate)	2
One class	13
Two classes	5
Three classes	5
Four classes	10
TOTAL	35

It would be seen from Table 25 that only twenty estates follow the classification. Of these only ten estates have all four classes. In such estates the arrangement is to start the initial tapping of a field in one of the classes and then observe the yield. The field is upgraded if the yield exceeds the minimum fixed for that class and the tapper will be paid incentive wages according to the new class.

The placing of the field in a particular class is an indication of the extent of yield obtained at the initial

level of tapping. Forexample, if the initial tapping starts in class III, it would show that the minimum yield obtained from that field should not be less than 448 kilograms per hectare per year. Table 26 shows the class in which the fields are included at the first opening for tapping.

TABLE – 26

CLASSIFICATION OF FIELDS AT THE FIRST OPENING FOR TAPPING

INITIAL STARTING OF TAPPING IN	NUMBER OF INDIAN ESTATES	NUMBER OF NON–INDIAN ESTATES
I Class	10	8
II Class	10	5
III Class	..	6
N.A. (Due to one class/ time rate)	15	1
TOTAL	35	20

In seventeen non–Indian estates the revision of field takes place after one year of the first opening while in two the revision takes place after six months. During the period the yield from the particular field is examined and if the yield exceeds the minimum fixed for that field it will be re-classified and brought into the second or third class as the case may be.

Though half yearly revision was made in two non–Indian estates there were seven more estates which took into consideration the average yield of the first six months for revision although the actual revision took place after one year. In the other ten non–Indian estates the average annual yield was the basis for revision. The basis and duration of revision have been generally arrived by agreements between management and workers.

The basis of revision in the Indian estates covered by the study was the average yield of a year and the duration of revision was annual. Even this arrangement existed

in those Indian estates which followed piece-rated tapping or which has more than one field. There were only twenty such estates out of thirty-five.

Soil and leaf analyses:

Soil and leaf analyses are intended to diagnose the fertility status of soil types. The method is also known as discriminatory application of fertilisers. By the analyses it would be possible to identify the exact deficiency of the soil thereby enabling the application of the required dose of fertiliser. From the point of view of an estate, this will considerably reduce or even avoid the use of fertiliser. Unfortunately this practice is not very widespread even among the well-managed estates. The operation involves the collection of soil and leaf samples. This should be planned well in advance of the application of fertilisers. Usually fertilisers are applied twice in a year: during pre-monsoon and post - monsoon periods. There are standard methods of collecting soil and leaf samples for analyses.

The survery revealed that soil and leaf analyses were carried out in all non-Indian estates while it was done in fifteen Indian estates only. The details are shown in Table 27.

TABLE–27

SOIL AND LEAF ANALYSES (1974–75)

AGENCY ANALYSING SOIL AND LEAF	INDIAN ESTATES	NON–INDIAN ESTATES
Done by the Rubber Research Institute	8	6
Done by the companies controlling the estates	..	14
Done by private agency	7	..
No analysis	20	..
TOTAL	35	20

Method of spraying:

The most important malady affecting rubber plantations in India is the abnormal leaf-fall disease. It is an annual occurrence. Spraying of oil-based copper fungicide is the most common method of treatment adopted by the planters against the disease. For a long time the equipments used by the planters were the minimicron or micron sprayers. During the last decade helicopter spraying has become the most wide-spread method. For this purpose the planters engage companies specialising in spraying on contract-basis. Sometimes the rate is inclusive of the spraying material. In addition to spraying, dusting of sulphur against powdery mildew disease is also necessary in certain areas. For this purpose dusters are used.

The study showed that helicopter spraying was carried out in nineteen non-Indian estates while dusting alone was done in the remaining one estate. This estate is located in a belt where abnormal leaf fall disease is not serious. In twenty eight Indian estates helicopter-spraying was carried out while mechanical or hand-operated sprayers were used in five estates and in the remaining two estates no spraying was carried out in 1974-75. However in three estates dusting was also carried out.

Even where helicopter is used it becomes necessary to use hand-operated or mechanical sprayers in certain pockets of the estate. This is necessary because helicopter spraying may not penetrate the whole area. What is presented in the above discussion is the predominant practice.

Mechanisation:

A certain degree of mechanisation has been introduced in the estates, particularly in the factory. In the field, the extent of mechanisation is limited. However for transporting and plant protection, mechanical devices are used in the field.

Mechanisation in the field:

The most common form of mechanical device used in the field for plant protection operations is the helicopter. But no estate or company controlling the estate owns helicopter. The estates engage them on contract basis. The number of estates making use of the helicopter for spraying has been discussed above. Certain estates are also using power - operated sprayers. In no estate are mechanical devices used for levelling, pitting, felling or for other field operations. The common vehicles in use in the Indian estates for travel are motor cycle and jeep, while motor cycle and car are common in the non-Indian estates.

A number of Indian estates use own vehicles for transporting the produce while most non-Indian estates engage contractors for the purpose. More tractors are found in the non-Indian estates than in the Indian estates. All tractors have trailors also. A few estates have more than one trailor. This reduces the waiting time for loading and unloading. A few estates have more than one type of vehicle. The details are presented in Table 28.

TABLE 28

MECHANISATION IN THE FIELD

ETATES CLASSIFIED ACCORDING TO THE TYPE OF VEHICLE OWNED		INDIAN ESTATES	NON-INDIAN ESTATES
Jeep only	—	6	..
Jeep with trailor	—	11	2
Lorry	—	4	4
Tractor with trailor	—	3	6
Motor cycle	—	5	18
Car	—	2	15
Van	—	1	..
Kubota Tiller	—	1	..
No Vahicle	—	13*	..

**The thirteen estates are either small or belong to a group of estates owned by one company and another estate in the group provides the transport facility.*

Mechanisation in the factory :

The majority of Indian and non-Indian estates have sheeting batteries or rollers. Fifteen non-Indian estates have standby generators also. The details are shown in Table 29.

TABLE - 29

MECHANISATION IN FACTORY

TYPE OF MACHINES	INDIAN ESTATES	NON-INDIAN ESTATES
Sheeting batteries	16	17
Centrifuging machinery	3	3
Standby generators	..	15
Rollers	17[A]	..
Cranes	2	..
Driers	..	2
Mechanical press	..	2
Chain Blocks	..	1
Trolley on rail	..	1
No machinery	2[B]	2[C]

a) Out of the seventeen rollers, thirteen are hand-operated. The hand-operated rollers are housed in sheds which cannot be strictly called factories.

b) The two Indian estates have no equipments worth the name

c) The two non-Indian estates have no factories. Their crop is processed in the nearby estates belonging to the same company.

Type of power unit:

In the non-Indian estates where there is factory, electricity or internal combustion engine is used for running the machinery. This is not the case in all Indian estates. Electricity is found only in fourteen estates while internal combustion engine is used in five estates. In one estate both are available.

Electricity and internal combustion engines (mainly standby generators) are used in sixteen non-Indian estates. In one estate electricity alone is available and in another only internal combustion engine is available. The details are shown in Table 30.

TABLE – 30

TYPE OF POWER UNIT IN THE ESTATE FACTORY

TYPE OF POWER UNIT IN THE FACTORY	INDIAN ESTATE	NON-INDIAN ESTATE
Electricity and Internal combustion engine	1	16
Electricity only	14	1
Internal combustion engine only	5	1
Hand operated unit	13	..
No power unit	2*	2*
TOTAL	35	20

* No factory.

Products processed:

All non-Indian estates are producing Estate Brown Crepe rubber (EBC). Eighteen non-Indian estates also produce RMA[74] sheet rubber. In addition, eight non-Indian estates produce Pale Latex Crepe (PLC) rubber and four estates, concentrated latex. RMA sheet rubber is produced by thirty-three out of thirty-five Indian estates. Estate Brown Crepe rubber is produced by twelve Indian estates only. The remaining twenty-three estates sell scrap rubber. It may be noted that about fifteen to twenty per cent of

74. *The abbreviation 'RMA' stands for the Rubber Manufaturers' Association of U.S.A. who had originally formulatad the International grades for natural rubber.*

the crop of an estate is scrap rubber. This can be transformed into Estate Brown Crepe rubber or Solid Block Rubber in the factory of the estate or can be sold to crepe millers as scrap. The estate can produce one or more items of rubber, such as RMA sheet, EBC, PLC or concentrated latex. Solid Block rubber can also be produced in the estate, but its production has not become common. The common form of crop is RMA sheet rubber.

Though there were fourteen Indian estates producing concentrated latex, only three estates had own equipment. Others get their latex concentrated from the factories belonging to the same company. Some planting companies have concentrating factories away from the estates also. There was no factory producing solid block rubber in any of the estates covered by the study. Table 31 shows the different types of rubber produced in the factories.

TABLE – 31

PRODUCTS PROCESSED BY THE ESTATES

TYPE OF PRODUCTS		INDIAN ESTATES	NON-INDIAN ESTATES
RMA sheets	—	33	18
EBC	—	12	20*
PLC	—	8	8
Concentrated latex	—	14	4*

* *There was no factory in one estate for producing EBC and Concentrated latex. The crop was processed in other estates belonging to the same company.*

Planning for the sale of produce:

Planning for rhe sale of produce and market research are not carried out in any significant way in the estates covered by the study. The sale of rubber is effected by the head office of the company controlling the estate. Since the minimum and sometimes the maximum price of rubber

is fixed by the Government of India, there is not much scope for increasing the price by these methods. Further many companies enter into long-term contracts with the dealers or manufacturers for the sale of rubber. There is also generally good demand for the rubber produced by the estates compared to that of small growers as the quality of rubber is generally high.

Materials planning:

Planting materials, fertilisers and plant protection materials are the most important items involving heavy expenditure in the estate. All large estates have their own nurseries to develop high-yielding planting materials. The development of planting materials is linked to replanting programme of the estate. These estates are usually self-sufficient in regard to their requirement of planting materials.

The use of fertilisers and spraying materials also requires planning. The duration of holding and the method of procuring these items are discussed in Chapter VIII. It may however be mentioned here that there is some degree of planning in all large estates for the use of these items.

Research facilities:

Establishing facilities for research is an indication of the long-term planning of the management for improving the productivity of the estate. The study has found that own research was carried out in one non-Indian estate while five non-Indian estates provide facilities for the Rubber Board to conduct research. In addition, all non- Indian estates and twenty Indian estates provide data relating to yield of different planting materials, rain fall, tapping methods and crop of selected fields to the Rubber Board for a research project launched for evaluating the yield of different planting materials. A number of non-Indian estates make use of the research findings of estates belonging to sister-concerns located in other countries.

Seven Indian estates carry out their own research. These are mainly spraying or fertiliser experiments. In addition, the Indian estates allow the Rubber Board to conduct research. The research is mainly in the field of selection of planting materials, plant protection and manuring. A group of Indian estates has developed a few high yielding varieties of planting materials as a result of own research.

Long term planning:

Long term planning of replanting is attempted in all non-Indian estates and most of the Indian estates. Replanting is invitably preceded by planning of activities at least a few years in advance. When a decision is taken to replant a particular area, it will require intensive tapping. This will be carried out usually for a year and then the area is earmarked for slaughter-tapping. In the non-Indian estates such areas are given to contractors on the basis of highest bidding. Slaughter-tapping will be usually extended to one or more years. Afterwards the trees are felled and removed by the contractor. The area is then prepared for planting. The above mentioned stages will take at least three years for their completion. All estates undertaking a phased programme of replanting have to prepare long term plans exteding at least five years for the purpose. In addition some estates have long term plans for replacing tea with rubber in the lower elevations of the estates. Such estates mainly belong to the non-Indian group of companies. For want of suitable areas, new planting is not extensively undertaken by estates. However small areas are newplanted. In that case some planning extending over two or three years would also be required.

Planning consciousness:

Planning consciousness is gradually catching up interest in the Indian estates. This is manifested in the interest that some of them are showing to the collection of data relating to the yields of different planting materials. The

introduction of small calculators to aid the interpretation of data in some estates and the proposed use of a computer by a non-Indian company are also evidences to show the trend. Most of the estates are making available vital data in their possession to the Rubber Board. This also shows their desire to plan in a better way. The role of the Rubber Board in this regard is to impress upon the estate-managements the necessity of planning and this is done by the Board through seminars and training classes. In the curriculum of the estate management course organised by the Rubber Board, preparation of budget and interpretation of statistical data are also included. If the Board presents the average yield of different planting materials in different agro-climatic regions in the country it would be helpful to the planting community.

4. EVALUATION OF PLANNING METHODS ADOPTED IN RUBBER ESTATES

The foregoing analysis would show the practices followed in estates in regard to different aspects of planning. From the study it has been found that all non-Indian estates have fixed more or less clear objectives regarding the estate. The main objective relates to production and productivity. In all these estates the objective has been quantified in terms of kilograms of rubber to be produced and cost of production per kilogram. The cost of production and the quantity to be produced during the year are fixed in advance. For the purpose the expenditure on different items is also calculated in advance. This is in the form of a percentage of area under rubber to be replanted every year. By and large all non-Indian estates have a clear objective in their planning.

Although the majority of Indian estates have objectives, they are not often very clear-cut. The clarity of objective is found to decline with the size of estate. It is observed that in the case of small estates and estates managed by private limited companies, clear objectives have not been fixed. It may however be mentioned that one group

of Indian companies with five estates and another company with one estate have established clear objectives similar to a well managed non-Indian company. Three Indian estates have no annual budget and five Indian estates have no daily plan. This would show a lack of planning and control in these estates.

It has been found that fifty-three estates belonging to both groups make some forecasting of next year's production and cost. However the methods used for forecasting by all estates are not the best. In the case of two non-Indian companies controlling fourteen estates, modern methods are used for forecasting. All non-Indian estates regularly forecast the yield and cost of production. Twenty-eight Indian estates also regularly forecast production and cost. The previous year's trend is often used for forecasting the future.

In the field of decision-making, two non-Indian companies are making use of statistical analysis. In these companies vital decisions such as the type of planting material to be used and the method of tapping to be adopted are made on the basis of data collected from the constituent estates and after analysing the same with the help of data-processing equipment. Other non-Indian companies also make use of data for decision making. Six Indian estates belonging to four companies have some method of analysing the data and important decisions are made on the basis of the data collected from the estates. In the other estates, experience is mainly relied upon for decisions.

The study also shows that planning is effective and is usually undertaken in respect of replanting of rubber area with high yielding varieties. The arrangement made in this regard is generally satisfactory. However, the formulation of budget and the utilisation of the data available from within the estate for planning and decision-making require much more attention. In the case of some estates, though data are collected on many vital aspects, collection is done in a ritualistic manner. Their utilisation has to be

properly attempted. Planning of procurement or utilisation of materials also requires improvement. These observations are more relevant in the Indian estates than in non-Indian estates.

On the whole planning is followed more systematically by the non-Indian estates than by the Indian estates, although a few Indian estates are comparable with non-Indian estates in the formulation and implementation of plans.

CHAPTER - IV

ORGANIZATIONAL ASPECTS OF RUBBER PLANTATION MANAGEMENT

1. PURPOSE OF ORGANIZATION IN RUBBER ESTATES

Management writers use the term 'organization' to denote a "process and to describe the results of that process". [75]Organization comes into being only when two or more persons are associated in an endeavour. The purpose of orgnization in the estate is to create a frame-work of duties and responsibilities for the persons employed. An organization chart can be used to show, who reports to whom in the estate.

The fundamental principles of organization are, authority, responsibility and accountability. Authority is the right to decide or act independently in the discharge of responsibility. Accountability is a subordinate's obligation to report his activities and results to his superior. Responsibility and accountability go together. It has been stated that "responsibility is an obligation to perform, whereas accountability is an obligation to inform".[76]

As in other industries, organization in an estate takes a hierarchical structure with positions on a scale running from top to bottom linking different ranks. The chain forms a communication net-wotk flowing upward, downward and horizontally.

There are different departments or sections in the estate. Departmentation has been defined as the "executive's action in dividing and arranging personnel and facilities in

75. *Ernest Dale*, Op. cit., *p.* 158.

76. *Asthana, G. P.*, The Ground-Work of Management, *Shiva Lal Agarwala & Company, Agra*, 1972, *p.* 49.

specialized units".[77] The most widely used basis for departmentation is along functional lines, such as production, marketing and finance. In the estates also this principle is followed.

A degree of delegation and decentralisation is inevitable in the estate as the manager alone cannot run the set-up. Decentralisation and delegation are closely related concepts. Decentralisation is in relation to position while delegation is in relation to person. Decentralisation and delegation are effective tools for preparing management succession.

The personnel in an organization can be grouped as those discharging line functions and others discharging staff functions. The staff members concentrate their attention upon research and planning while line officials devote themselves to the execution of policy. Many writers on management have noted the conflict between line and staff in an organization. In the estate the head clerk, the doctor and the teacher belong to staff category while the field and factory supervisors and the rubber-maker belong to line.

Organization assumes the existence of subordinates at different levels. This implies. that the subordinates should be effectively controlled. The concept of span of control has relevance in this context. Span of control refers to the maximum number of subordinates that can be placed under one manager. In the rubber estates the span of control is considerably large.

Since organization involves the collective effort of a number of persons, co-ordination of their activities is essential. It is necessary because of the complexity, specialisation and departmentation of a large organization. Activities in the estates are co-oidinated by the manager while the relations between the company and the estates are co-ordinated by the visiting agent or the managing director.

77. *Morris E.Hurley*, Op. cit., p.114.

2 EVOLUTION OF ORGANIZATION IN RUBBER PLANTATION INDUSTRY

As mentioned in Chapter I, the rubber plantation industry was introduced into India by the Europeans. They were in a better position to obtain large areas of land at concessional rate from the dominating British Civil Servants who ruled the country in those days. Even in the Indian States, the British Resident or the British Devan wielded enormous power. Further the Europeans had acquired the expertise to run vast plantations with slave or indentured labour.

Before the advent of natural rubber, the Europeans were running plantations mainly of tea or coffee in India. At that time the commercial system of Europe was also geared to the development of plantations. The starting of rubber plantations was only an extension of their activities. Another factor in their favour was the availability of large capital. It was available in London, which was the then financial centre of the world.

The Europeans used three forms of organization for managing the estates : by individuals, partnerships and companies. Most of the early estates were set up by individuals or group of individuals. Later they changed the from of ownership into public limited companies. Some estates were bought by the companies from individual planters who found the cost of planting very high. Some others could not wait until the estates started earning profits and still others found the price offered for the estates very attractive. Some companies came into being when managing agency firms floated them around existing estates which they had developed. After floating the companies they kept the control with the majority of shares and continued to manage them on commission basis.

The agency firms had played an important role in the promotion of planting companies. Floating of companies needed special knowledge and connections with the money

markets of the world. In the early days the planters had to get invariably the help of the agency firms which had experience in floating companies. Further many small investors had confidence in them as they had long-standing connections with the East.

Managing agency firms were great merchant-houses mainly located in London. In the nineteenth century they dominated the export trade of the colonies including India. They were the main link between native producers and western manufacturers and had considerable control on raw materials' production. During the period of depression or crisis, the agency firms had the ability to survive while small companies went bankrupt.

In the development of rubber plantation industry, four agency firms were mainly involved. Of these three survived till recently. A few Indian managing agency firms were also established by about 1930. These were the efforts of two pioneering planters who floated a number of planting companies at that time. Later they organised them under two controlling companies.

Some of the erstwhile managing agency firms have been maintaining a loose relationship with the planting companies even after the abolition of managing agency system. This is achieved by getting the directors or executives of the managing agency firms elected to the board of the planting companies. Some of the former agency firms still render services to the planting companies.

The Plantation Inquiry Commission examined the organization structure of the rubber plantation industry. The Commission classified holdings and estates[78] on the basis

78. *The definition of holding at the time of inquiry of the Commission was upto and including hundred acres (40.47 hectares). This has been later changed as upto and including fifty acres (20.23 hectares). See Chapter 1 : Definitions.*

of ownership as belonging to individuals, families and partnerships and estates belonging to joint stock companies and managing agency firms.

The Commission made further classification in the case of joint stock companies on the basis of control as distinct from ownership. According to the Commission the type of control was represented by the nationality of the majority of members on the board of directors and the nature of ownership was represented by the nationality of the majority of share holders of the company. In the case of companies under the managing agents, the Commission thought that the real control could be said to vest with the managing agency and therefore the type of control of the company could be determined by the nationality of the board of directors of the managing agency.

The Commission analysed the replies received from various companies and organizations. Table 32 reproduces their analysis.

TABLE - 32

AREA OF REPORTING COMPANIES AND PROPRIETARY AND PARTNERSHIP FIRMS (1953)

FORM OF OWNERSHIP	NUMBER	AREA (Hectares)	PRODUCTION (M.T)
Companies			
Sterling	4	10508	4028
Rupee non-Indian	6	5154	1917
Rupee Indian	29	7703	4627
Proprietary/Partnership			
Non-Indian	1	135	29
Indian	38	3752	949
TOTAL	78	27252	11550

Source: Madhava Menon, P.P., Op. cit., p. 9. (Figures converted to metric units)

The replies received by the Commission covered 32.5 per cent of the area under estates of over hundred acres (40. 47 hectares). The details included all sterling companies and rupee companies under non-Indian control. The Commission found that the total alea under sterling and non-Indian ownership and control was about forty thousand acres (16189 hectares) and formed about twenty per cent of the total area under rubber and thirty per cent of the total production.

At the end of 1974-75, there were ninety-three limited companies operating in the rubber plantation industry. Of these twenty-one were private limited companies, a distinction which was not in existence at the time of the Plantation Inquiry Commission.

3. FINDINGS OF THE STUDY

The aim of organization in rubber plantation iudustry is to establish a suitable structure for planting and maintaining the estate. As far as the planter is concerned the most important asset is the land. Therefore the organization structure should be conducive to its optimum use. Further as rubber is an agricultural crop, the basis of organization would naturally be the land. In this connection an examination of the utilisation of land is relevant.

Utilisation of land:

The thirty-five Indian and twenty non-Indian estates examined for the study had a total land area of 26,672 hectares in 1974-75. Out of this area, 20,862 hectares were planted with rubber. Other crops occupied 2,154 hectares. The break-up of the area is presented in Table 33.

Table 33 shows that eighty-six per cent of total area in the Indian estates was planted with rubber while the percentage in the non-Indian estates was only seventy-four. The non-Indian estates had higher percentage of other crops under them. The percentage of land which can be utilised for cultivating rubber was also higher in the non-Indian estates.

TABLE – 33

DISTRIBUTION OF TOTAL AREA IN THE ESTATES STUDIED

(IN HECTARES – 1974–75)

	RUBBER AREA	AREA UNDER OTHER CROPS	LAND CULTIVABLE WITH RUBBER	WASTE, ROCKS, ROADS, BUILD-INGS AND OTHERS	TOTAL
Indian Estates	8202	452	271	570	9495
	(86%)	(5)%	(3%)	(6%)	(100%)
Non-Indian Estates	12660	1702	1049	1766	17177
	(74%)	(10%)	(6%)	(10%)	(100%)
TOTAL	20862	2154	1320	2336	26672
	(78%)	(8%)	(5%)	(9%)	(100%)

The area planted with crops forms the major investment of the planter. The most productive use of the planted area is therefore important from the point of view of profitability and viability of the estate. Hence the utilisation of rubber area may be examined further. The rubber area formed seventy-eight per cent of the total area of the estates.

TABLE –34

DISTRIBUTION OF RUBBER AREA

(IN HECTARES – 1974 – 75

TYPE OF PLANTING MATERIAL	AREA IN INDIAN ESTATES	PER-CEN-TAGE	AREA IN NON-INDIAN ESTATES	PERCEN-TAGE	TOTAL AREA	PERCEN-TAGE TO TOTAL AREA
Unselected seedlings	479	6	415	3	894	4
Clonal seedlings	2245	27	4823	38	7068	34
Budded materials	5478	67	7422	59	12900	62
TOTAL	8202	100	12660	100	20862	100

Table 34 reveals that the percentage area planted with unselected seedlings was more in the Indian estates than in the non-Indian estates. The percentage area under budded materials was also more in the Indian estates. Of the total area under rubber sixty-two per cent was planted with budded materials and thirty-four per cent with clonal seedlings. These two together formed the high yielding area in the estates.

The rubber area in an estate is divided for convenience of administration and organization into immature and mature area. The immature area is further classified as new-planted area and replanted area. Newplanting involves the extension of total area under rubber while replanting is only the replacement of old rubber area. Newplanting is carried out usually with the funds of the estate while replanting is mainly done with the subsidy of the Rubber Board. As the

subsidy is granted only after inspection and verification, separate classification has been maintained in all estates covered by the study.

Usually rubber tree requires about seven years for reaching the tapping stage and this period is called the immaturity period of rubber. Replanting of three per cent of the total rubber area every year has been generally practised by most estates. From the organizational point of view also this is a good practice since t will will give scope for re-deploying the permanent personnel evenly and thereby averting the need for recruiting personnel suddenly for planting purpose. It may be mentioned here that under the Industrial Disputes Act a worker is entitled to terminal benefits if he is employed for more than a certain number of days in a year. This may involve an addition to the wage bill. Hence a phased programme of replanting is most desirable.

From the study it has been found that twenty-eight per cent of the total area under rubber in the Indian estates and twenty-two per cent in the non-Indian estates were immature. Further there was no immature area in nine Indian estates while there was immature area in all non-Indian estates. It would show that some Indian estates were not undertaking phased replanting. The details of immature area under rubber in the Indian and non-Indian estates are shown in Table 35.

It would be seen from Table 35 that in Indian and non-Indian estates unselected seedlings were not used. This has been due to the statutory prohibition on their use. It can also be seen from the table that more budded materials were used in both groups of estates. The percentage was slightly higher in the non-Indian estates than in the Indian estates. The details of mature area under rubber are presented in Table 36.

Table 36 shows that in the Indian estates the percentage of unselected material was more compared to non-

TABLE – 35

IMMATURE AREA IN THE ESTATES STUDIED (IN HECTARES 1974–75)

TYPE PLANTING MATERIAL	INDIAN ESTATES			NON-INDIAN ESTATES		
	NUMBER OF ESTATES	IMMATURE AREA	% TO TOTAL IMMATURE AREA	NUMBER OF ESTATES	IMMATURE AREA	PERCENTAGE TO TOTAL IMMATURE AREA
Unselected seedlings	Nil	Nil	Nil	Nil	Nil	Nil
Clonal seedlings	12	391	17	9	338	12
Budded materials	24	1897	83	18	2478	88
TOTAL	26*	2288	100	20	2816	100

@ No immature area in nine Indian estates.

TABLE – 36

MATURE AREA IN THE ESTATES STUDIED (IN HECTARES 1974–75)

TYPE OF PLANTING MATERIAL	INDIAN ESTATES			NON-INDIAN ESTATES		
	NUMBER OF ESTATES WITH THE MATERIAL	MATURE AREA	PERCENTAGE TO TOTAL MATURE AREA	NUMBER OF ESTATES WITH THE MATERIAL	MATURE AREA	PERCENTAGE TO TOTAL MATURE AREA
Unselected seedlings	6	479	8	7	415	4
Clonal seedlings	30	1854	31	20	4685	48
Budded materials	30	3581	61	20	4744	48
TOTAL	35	5914	100	20	9844	100

Indian estates. However the percentage of budded material was higher in the Indian estates than in the non-Indian estates. It may be noted here that some clonal materials reach maturity earlier than seven years while budded materials reach maturity generally at or after seven years. The yield of budded material is found to be generally higher than the same variety of clonal material.

Organization structure:

The chief executive of an estate is called Superintendent or manager. In fourteen non-Indian estates he is designated as Superintendent and in the remaining six as Manager. In the Indian estates the designation is Superintendent. Whatever be the designation their duties and responsibilities are the same in all estates. As we have seen in Chapter I the term manager is used to designate both manager and superintendent. From the point of view of management theory also this appears to be the correct term. There is uniformity in the organization structure in both Indian and non-Indian estates.

The assistant manager is the immediate officer under the manager in the estate. If there are more than one assistant manager, the seniormost will be the second in ranking. When the manager is in station, the assistant manager confines his supervision mainly to the field. Sometimes he may also supervise the factory, but not the office, hospital or school. However, when the manager is not in station, the seniormost assistant manager will act in his place and discharge all his duties.

Normally there will be one assistant manager in all large estates. There may be two assistant managers if the estate produces tea and rubber or if the extent of the estate is about two thousand acres (809 hectares) or more. From the study it has been found that in four non-Indian estates there were two assistant managers each while in eleven estates there was only one and in the remaining, there was

none. Assistant managers existed in six Indian estates at the rate of one each.

The manager is in overall control of the estate and very often the personality of the manager influences the management decisions and functions. He is accountable only to the company. There are different ranks among the superintendents and managers. In the estates where the designation is superintendent the following are the usual ranks according to seniority and pay:

Senior Superintendent
Permanent Superintendent
Acting Superintendent
Relieving Superintendent

Relieving Superintendent is the junior–most in rank. In estates where the designation is manager the usual ranks are

Group Manager
Senior Manager
Manager

The Manager is the junior–most in the rank. It may however be noted that such designations are in vogue only in companies with a number of estates.

The position of visiting agent is above the manager but below the managing director of the company. The visiting agent functioned for twenty non–Indian and twenty–one Indian estates. In eighteen non-Indian estates he was an officer of the company controlling the estate while in the remaining two he was an outsider. In six Indian estates, the duties were performed by the managing director. In three Indian estates he was called consultant and was not a regular officer of the company. The visiting agent functioned usually for a group of estates and not for one. Table 37 shows the details of their position in Indian estates.

TABLE – 37

POSITION OF VISITING AGENT IN INDIAN ESTATES

TYPE OF OFFICERS	NUMBER OF ESTATES
Executive in charge of rubber at H. Q.	5
Managing Director	6
One of the Directors (Including M. D.)	7
Cansultant (Not a regular officer)	3
No Visiting Agent	14
TOTAL	35

The duties of the visiting agent and the regularity of visit are discussed in detail in the Chapter dealing with Direction and Control. For the present it may be noted that he is an important officer for the co-ordination and planning of activities in the estate.

Apart from the assistant manager, the manager is assisted in the discharge of his duties in the factory by a rubber maker. If the estate is a mixed one, he is also assisted by a tea maker. If there is a full-fledged hospital in the estate, a qualified medical officer is employed. In the absence of a hospital the estate will employ an apothecary or compounder. In that case they will also report directly to the manager.

Office work is carried out by the head clerk assisted by a number of clerks. In some estates clerks are designated as assistants.

In certain estates a school also will be functioning. The headmaster / headmistress of the school will be reporting directly to the manager. For every division of the estate there will be one field-conductor. In some estates he is also called field-writer. If the division is large there may be one or two assistant conductors. In that case he may be called the head

conductor. Below the assistant conductor will be the tapping supervisors and field supervisors. If the division is very large there may be a separate conductor above tapping supervisors. The tapping supervisor supervises the tappers while the field supervisor oversees the field workers. In some estates such workers are called general workers. In that case the supervisor is designated as general supervisor. Some of the supervisors are the former *Kanganies* and some are drawn from among the very efficient workers. There are direct appointments also. In the estates covered by the study supervisors were found to be men only.

In the factory the rubber maker is assisted by one or two assistants. Below them would be the supervisors. In the hospital / dispensary, the doctor / apothecary / compounder is assisted by one or two nurses or midwives and wardboys. Though this is the pattern in all large estates belonging to Indian and non–Indian companies, it is not the usual pattern in small estates where some of the above functionaries may not exist at all. The number of divisions in an estate is an indication of the size of the estate. In a large number of Indian estates there was only one division. The details are shown in Table 38.

TABLE – 38

NUMBER OF DIVISIONS IN THE ESTATES STUDIED

NUMBER OF DIVISION	INDIAN ESTATES	NON–INDIAN ESTATES
1 Division	16	2
2 Divisions	17	8
3 Divisions	1	10
More than 3 Divisions	1@	Nil
TOTAL	35	20

@ This estate consists of eight small estates totalling together 527 hectares. Of the eight, six estates are close by. Hence these are treated as divisions only.

It will be seen from Table 38 that ninety per cent of non-Indian estates had two or more divisions while the percentage of Indian estates with two or more divisions was only fifty-four.

Functions of the manager:

The manager is the keystone of the management arch in the estate. The management functions can be broadly classified under the following heads:

(1) Planning
(2) Plant protection
(3) Collection and processing of crop
(4) Statutory obligations
(5) Administrative duties
(6) Other functions

The details relating to the first three have been examined in the chapter dealing with Planning. Therefore the details of the remaining functions alone are discussed here.

Statutory obligations:

In India a separate legislation called the Rubber Act has been enacted with a view to developing rubber plantation industry. Assuch a manager has to be conversant with the various provisions of the Act. In addition, a number of legislations have been enacted with a view to protecting labour, including plantation labour. The most important legislation affecting plantation labouris the Plantations Labour Act, 1951.

The provisions of the Act are discussed in chapter VII. In addition to the Plantations Labour Act, such of the legislations as are applicable to workers in general are also applicable to plantation labour. The following are the important legislations:

(1) Workmen's Compensation Act, 1923.
(2) Trade Unions Act, 1926.
(3) Payment of Wages Act, 1936.

(4) Industrial Employment (Standing Orders) Act, 1946.
(5) Industrial Disputes Act, 1947.
(6) Minimum Wages Act, 1948
(7) Employees' Provident Funds Act, 1952.
(8) Maternity Benefits Act, 1961.
(9) Payment of Bonus Act, 1965.
(10) Payment of Gratuity Act, 1972.

Under the various statutes the manager is required to submit returns to the Government and Quasi-Government organizations. Therefore he has to be conversant with the preparation of the returns, the due dates of their submission and the penalty for non-submission.

Administrative duties:

The manager has to control a large labour force and considerable number of staff. They look up to him for direction and guidance. Though workers and staff are controlled at various levels by supervisory personnel, the ultimate responsibility of running the estate efficiently rests with him. Proper allocation of work, giving timely instructions, formulating plans and implementing them are also his responsibilities.

Apart from these functions he will have to attend to a large volume of correspondence as well. Since disbursement of money is also his responsibility, he will have to exercise financial control. The custody and maintenance of records will also be his responsibility. He has to maintain liaison with the Rubber Board either through the company or directly. Controlling the use of stores, ensuring their receipt and despatching rubber at regular interval are also his duties.

Other functions:

Owing to the isolated nature of plantations the manager has to render a number of services to labour. Some of these services are statutory while others are voluntary. Distributing food grains through fair price shops, promoting Govern-

ment schemes like family planning, small saving and applied nutrition programmes to school children are some of the voluntary services. The statutory services have been referred to above. He has also to promote sports and games organised by local people and local festivals.

Certain plantations are prone to malaria and as such the manager is required to take measures for preventing the disease. Construction and repair of roads, buildings, labour lines and factory are to be undertaken in the estate frequently. As such he should be familiar with the design and construction of the same. He should be conversant with surveying. Recording of rainfall and temperature will be another of his responsibility. Since water supply is a problem in most estates, the quantity of water required by the factory, the nursery and for human consumption will have to be estimated and necessary planning for the supply will have to be undertaken by him.

Lay out of the field:

If the estate has more than one division, each division will be usually under an assistant manager. If however the estate is small then the whole area will be looked after by the manager himself assisted by assistant manager if any or by the division conductor. It is found from the study that originally the classification of divisions in an estate was made for administrative convenience and accessibility. If two areas were separated by distance, they were invariably divided into two divisions irrespective of the size. Divisions are further divided into fields. Each field will normally consist of a number of blocks. Since the launching of replanting, a rational basis has been given for dividing the various fields. The bases adopted for the division of fields in the estates covered by the study are the year of planting and planting material.

The present practice is to plant a particular material in a year. Budded or clonal planting materials of the same type will be planted in two places. For example budded material of 'Tjir 1'[79] planted in 1961 and clonal seedlings

79 'Tjir 1' is the name given to a variety of planting material. It was developed in Indonesia. There are nearly hundred varieties of planting materials in rubber in India.

of 'Tjir 1' planted in 1961 will be in two places and separate notations will be given to them in the record. This will enable the manager to identify the field. As far as the size of the field is concerned the bottom is provided by a block.

Lay out of the factory:

The factories are located at accessible places connected by roads in the estates investigated. Where factories exist, they are constructed in such a way as to give access to lorries and tractors without any difficulty. The doors are found to be wide as to allow the vehicles to go near the loading place. In some estate factories, separate loading bays have also been provided. The basis for the lay out of the factory is the process employed for manufacture. The details of products manufactured have been given in the Chapter on Planning.

Number of workers under one supervisor:

The number of workers under one supervisor has bean examined in the course of investigation. This has been studied between Indian and non–Indian estates. The position in respect of field workers, tappers and factory workers has also been separately examined. The details are given in Tables 39 to 41.

TABLE – 39

CONTROL OF FIELD WORKERS (1974–75)

NUMBER OF WORKERS IMMEDIATELYUNDER ONE SUPERVISOR	INDIAN ESTATES	NON–INDIAN ESTATES
15 workers or below	6	Nil
16 to 20 workers	7	3
21 to 25 workers	15	10
26 to 30 workers	7	7
TOTAL	35	20

TABLE – 40

CONTROL OF TAPPERS (1974–75)

NUMBER OF TAPPERS IMMEDIATELY UNDER ONE SUPERVISOR	INDIAN ESTATES	NON–INDIAN ESTATES
10 tappers or below	15	NIL
11 to 15 tappers	15	5
16 to 20 tappers	5	15
TOTAL	35	20

TABLE – 41

CONTROL OF FACTORY WORKERS (1974–75)

NUMBER OF WORKERS IMMEDIATELY UNDER ONE SUPERVISOR	INDIAN ESTATES	NON-INDIAN ESTATES
Below 8 workers	10	Nil
8 to 10 workers	18	8
11 to 15 workers	2	10
No factory workers	5	2
TOTAL	35	20

From the three tables it would be seen that the number of workers under one supervisor varied between Indian and non–Indian estates.

In this connection it may be mentioned that the situation in the rubber plantation is different from a purely manufacturing firm. The main item of work in a rubber plantation is tapping. It is a semi–skilled work. An incentive element has been introduced in the wages of tappers in most estates. As a result close supervision with a view to increasing the out turn of work may not be always necessary. The other important item is field work involving weeding, fertiliser application and spraying. These items of work can be performed without any technical skill. Hence there also close supervision may not be very essential.

It may also be noted that the number of workers under one supervisor varied among field workers, tappers and factory workers. The lowest number of workers under one supervisor was found in the factory while the largest was in the field. The range in the field was usually between fifteen to thirty while it was eight to fifteen in the factory. The range for tappers was between ten to twenty.

4. EVALUATION OF ORGANIZATION STRUCTURE IN RUBBER ESTATES

Duties, responsibilities and accountability:

The duties and responsibilities of workers are formalised in India by a legislation called the Industrial Employment (Standing Orders) Act. Though the Act applies to plantations employing one hundred or more workers, large number of small plantations have also certified standing orders. The study has shown that only three Indian estates have not certified the standing orders. These estates are not covered by the provisions of the Act also. Separate standing orders are applicable to workers and staff. Still there are areas which are not covered by the standing orders. There lations in these areas are regulated by custom, usage and informal agreements.

Though standing orders apply to workers and staff, they are not applicable to managerial personnel i. e., to the manager and assistant managers. There is a lot of informality in the relations between them and the company.

Organization chart:

No formal organization chart was prepared in any estate. However, the relationship between different grades of supervisory staff was known to the manager. There was also no office manual for guidance in any estate. The implied understanding between the manager and the company was that he should undertake all necessary steps for the proper

running of the estate. There was also no job description for any staff or managerial personnel in the estates covered by the study. However the manager could obtain the written advice of the head office on matters of importance.

Departmentation:

Departmentation existed in all estates. In most estates these consisted of the office, the factory, the field, the hospital and the school. There was clear-cut division of authority among the different departments or sections. There was considerable interdependence between the office, the field and the factory. The records relating to the field and factory are maintained in the office. A staff member attached to the factory or field reports the matter to the office. This is recorded by one of the clerks.

Delegation and decentralisation:

Delegation and decentralisation are also found to be informal rather than formal. In the absence of the manager, the assistant manager is responsible for running the estate. Where there is no post of assistant manager, the senior-most conductor or the head clerk will be discharging the duties of the manager. There wes no clear-cut delegation or decentralisation in writing in the estates covered by the study. The relations of the manager of the estate and the managing director of the company are not regulated by any formal orders.

Staff and line:

The distinction between staff and line is less clear in the estates. Perhaps there is less scope for the distinction compared to a manufacturing firm. However head clerk and clerks are rendering the sevices of staff members. The head clerk is at the same time the accountant also. To a certain extent the roles of the doctor / apothecary or compounder and the headmaster or headmistress are also similar to those of the staff in a manufacturing or service organization. In companies controlling a number of estates separate personnel are posted at the head office to render

assistance to the management on matters of finance, personnel and statistics. But such companies were only four in number, three belonging to the non-Indian group and one in the Indian group.

Co-ordination:

Co-ordination is effected mainly by the visiting agent. If however there is no visiting agent, the managing director of the company will be usually exercising the necessary co-ordination by his visits to the estates and discussions with the estate manager at the head office.

The conclusion drawn from the study on organization structure in the estates is that there is clear structure with different departments in the large estates belonging to both Indian and non-Indian groups of companies. Since there are more large estates in the non-Indian group, the organization structure is more clear in those estates than in the Indian group of estates. As observed in the Chapter dealing with Planning, there are a few Indian estates which are comparable to the non-Indian estates in the matter of organization also.

CHAPTER - V

PERSONNEL MANAGEMENT IN RUBBER PLANTATIONS

1. IMPORTANCE OF PERSONNEL MANAGEMENT IN RUBBER ESTATES

In management theory, personnel management is treated to include "manning the organization structure through proper and effective selection, appraisal and development of personnel to fill the roles designed into the structure".[80] Personnel management also includes, manpower planning, recruitment, training, promotion and transfer of personnel. Some writers have also included administration of compensation, demotion and termination from service as part of the same functional area.

Manpower planning is one of the important functions in any organization. Job analysis is the basis for manpower planning. It seeks to discover what is expected from the person on the job, how the job is performed, the skills and experience required and the opportunity for advancement. To find the quality as well as the quantity of work expected from each job, job standards are established. Time study and work load analysis would give the necessary information for establishing such standards.

Manpower planning leads to the concept of recruitment. Recruitment is the calling of candidates for positions to be filled. It includes the identification of the sources of candidates. Recruitment may be simple or complex, depending upon the position to be filled and can be from sources within or outside the organization. Recruitment from outside may involve any one or more of the following methods:

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80. Harold Koontz and Cyril O'Donnell, *Op. Cit.*, p. 417.

selecting applicants already on the file, calling applications by advertisements, recruitment through agencies, scouting for talents in schools and colleges and approaching professional bodies. The sources within the organization are nomination by present employees and trade unions. In plantations these agencies are extensively relied upon for recruitment of workers. While this is the case of workers, the managerial and supervisory personnel are recruited largely by advertisement. The purpose of selection is to find the best candidate from the applicants. Important methods of selection are interviews, tests, references and physical examination. Factors like education and training, skill, experience and physical characteristics are taken into consideration for selection.

Training and development are also part of personnel management. Usually a new recruit is given facilities to acquaint himself with the organization. The purpose is to give a broad understanding of the working of the organization. To gain first hand knowledge, on the job training is also given. Apprentice training is now adopted in most organizations.

Training is aimed at the improvement of skills to perform specific tasks while development emphasises "an unfolding process and carries an implication of growth and maturization".[81] Employment usually provides opportunities for both.

Transfer and promotion would be inevitable in any organization. Transfer is generally a "change in position without a change in status or pay "[82] while promotion amy be

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81. Dale Yoder, *Personnel Management and Industrial Relations*, Prentice-Hall of India (P) Ltd., New Delhi, 1967, p. 386.

82. Ernest Dale, *Op. cit.*, p. 368.

either or both. Sometimes a transfer may be resorted to correct an original mistake in selection. Promotion from within is the procedure the employees favour. Sometimes it is incorporated in the collective bargaining agreement concluded between management and workers. Seniority based on length of service is the usual basis for promotion.

Personnel appraisal refers to the procedure adopted for evaluating "the personalities and contributions and potential of group members".[83] There are different rating methods many of which make use of specific characters of the person and his work.

Salary and wage policy is the most common subject for collective bargaining in industrial organizations. It forms the usual basis for incentives also. Job evaluation is the usual method adopted to determine the salary and wages in manufacturing or similar organizations. The purpose of evaluation is to find out what a job is worth. There are four principal systems of evaluation:

(1) ranking system
(2) classification system
(3) point system and
(4) factor comparison system.

The application of one or more of the systems will depend on the type of organization and its special features and requirements. Ranking and classification systems are adopted in the estates.

2. FINDINGS OF THE STUDY

Manpower planning in estates:

Manpower planning has two aspects in the estates: (1) that at the time of starting of estates and (2) that during the course of its running. At the time of starting a phased plan of recruitment would be necessary. Managerial and supervisory personnel, tappers and factory workers will have to be trained for the future roles. Since plantation industry is already well developed, trained persons are now

available for recruitment and selection. This will obviate the need for training them at the expense of the estate.

During the course of running the estate also, advance planning is required. Such planning is necessary when replanting and new planting programmes or large construction projects are taken up for implementation. The seasonal nature of many operations also will entail the planning of recruitment. Since large number of women workers are employed in plantations maternity leave extending upto three months in a year will have to be granted statutorily to a number of women workers. This will also necessitate the planning for recruitment to fill up vacancies arising from maternity leave. In addition, the retirement and death of workers also involve the planning of recruitment.

An amount of advance planning is made in the majority of estates covered by the study to carry out day-to-day operations. As mentioned in Chapter III, the extent of advance planning is considerably limited. It will not exceed more than the days in any estate. In the majority of estates a weekly plan is adopted. Since any number of unskilled workers are available in the vicinity of almost every estate it may not be necessary for the management to plan recruitment much in advance. The fact that routine works like weeding and pruning are unskilled in nature may also obviate the necessity of advance planning for training. However, short term planning extending up to a week would be required for recruitment. In the employment of tappers, factory workers and technical and clerical staff, an element of advance planning would be necessary. Excepting tappers, other category of workers form only a small percentage of the total labour force. In view of the above, manpower planning does not present any serious problem in the management of plantations.

Recruitment:

Recruitment had presented many problems in the early days of rubber plantation industry. The estates were developed in remote areas often away from human habitation. This had led to the recruitment of workers from outside.

For this purpose the estate management used the services of *Kanganies*. The employers used to intimate their requirements of workers to *Kanganies* who were paid some advance also. Workers brought by a particular *Kangany* worked under his supervision. The employer in turn paid commission to the *Kangany* called 'head money'. This was usually on the basis of the number of workers brought by him.

Sometimes other agencies were also employed for recruitment. The Labour Investigation Committee (Rege Committee) found professional labour suppliers and subordinate estate staff also engaged in recruitment. As pointed out in Chapter I, the *Kangany* system had led to various abuses and was criticised by the Rege Committee The question of abolishing the system was discussed at the Third Session of the Industrial Committee on Plantation in November 1950 and subsequently at a tripartite meeting held in Madras in February 1951. The employers and employees generally favoured the continuance of the system for some more time. Subsequently the Government of India formulated in consultation with certain State Governments a scheme for limiting the number of workers under a *Kangany* and providing for the establishment of estate gangs with a view to checking the evils of the system. In 1958 a State-wide agreement was concluded in Madras (Tamil Nadu) settling an industrial dispute relating to the conditions of work and employment of *Kanganies*. The agreement made provision *inter-alia*, for the payment of compensation to the *Kanganies* on the termination of their contracts as labour suppliers either by merging their commission in their wages or by an outright payment at a prescribed rate. For *Kanganies* opting to continue in service, the agreement created a cadre of Labour Supervisors.

A Committee appointed by the Government of Kerala also recommended the total abolition of the *Kangany* system and the creation of a new cadre of Labour Supervisors. The State Government accepted the recommendations of the Committee with certain modifications in 1959. The employers agreed to discontinue the system from 1960 and the abolition was completed in 1962.

There had been parallel development in Mysore (Karnataka) also, though the system was not widespread there. By means of individual agreements several estates in the State had been able to rehabilitate their *Kanganies* as Labour Supervisors and to compensate those reluctant to continue in employment.

With the increase in settled population near the plantations, recruitment from outside has become negligible. The problem now is how to give employment to dependants of existing workers who are too numerous. In a number of estates agreements have been concluded between management and workers restricting future recruitment only from among dependants.

Estate managements have separate policies with regard to the recruitment of ordinary workers and clerical, technical, supervisory and managerial personnel. The majority of non-Indian estates make recruitment of ordinary workers from dependants only while preference is shown to dependants by the rest. A minority of Indian estates makes recruitment of workers from dependants. In these estates the trade unions have been able to enforce a policy of recruitment exclusively from dependants. This has been made either a part of agreements between management and workers or practice evolved over the years. The method of recruitment of workers is shown in Tables 42 and 43.

In all non-Indian and thirty-three Indian estates recruitment is made by the manager. In the remaining two Indian estates recruitment of workers is made by the managing director of the company controlling the estate. Very often field workers are promoted as tappers or factory workers depending upon their experience and suitability. Tables 42 and 43 show the position when they are recruited directly. Sometimes field workers are also posted as watch and ward and vice versa. The strength of different categories of workers in the estates covered by the study is shown in Table 44. The table shows that the percentage of field

TABLE - 42

METHOD OF RECRUITMENT OF WORKERS

(INDIAN ESTATES - 1974-75)

CATEGORY OF WORKERS	FROM LOCAL PEOPLE	LOCAL PEOPLE PREFERENCE TO DEPENDANTS	DEPENDANTS ONLY	TOTAL ESTATES
Tappers	10	13	12	35
Factory workers	8	10	12	30*
Field workers	11	12	12	35
Watch & ward	11	12	12	35

* No factory workers in five estates.

TABLE 43

METHOD OF RECRUITMENT OF WORKERS

(NON- INDIAN ESTATES – 1974–75)

CATEGORY OF WORKERS	FROM LOCAL PEOPLE	LOCAL PEOPLE PREFERENCE TO DEPENDANTS	DEPENDANTS ONLY	TOTAL ESTATES
Tappers	Nil	6	14	20
Factory workers	Nil	6	12	18*
Field workers	Nil	6	14	20
Watch & ward	Nil	6	14	20

* No Factory workers in two estates.

TABLE 44

CATEGORY OF WORKES AND PERSONNEL

(AVERAGE NUMBER – 1974–75)

TYPE OF WORKERS / PERSONNEL	INDIAN ESTATES		NON–INDIAN ESTATES	
	NUMBER	% TO TOTAL	NUMBER	% TO TOTAL
Tappers	2845	52	4034	40
Field workers	1615	29	4673	46
Factory workers	448	8	743	7
Artisans, watch and ward	177	3	448	4
Managerial, supervisory, clerical and other personnel	423	8	273	3
TOTAL	5508	100	10171	100

workers is lower in Indian estates compared to non-Indian estates. The shortfall is due to the following reasons.

In the first place nine Indian estates have no immature area. These estates would require more tappers and less field workers. Further, seven Indian estates have not manured their mature rubber area in 1974-75. As a result the number of field workers required for manuring will be reduced. The tapping of rubber tree every third day is widely practised in the non-Indian estates while it is not common in the Indian estates. In most Indian estates rubber trees are tapped once in two days. Consequently the percentage of tappers employed would be lower in the non-Indian estates. It has been found from a number of other studies that a hectare of rubber plantation would require anything between O. 9 and1 worker. From the present study it is seen that the worker per hectare is O.8 and O.6 respectively in the non-Indian and Indian estates. This would show that some more workers are to be accounted for particularly in the Indian estates. Generally the workers who are not included in the muster rolls are the casual workers employed for short periods in the field.

The higher percentage of managerial, supervisory, clerical and other personnel is mainly due to the small size of Indian estates. The average extent of rubber area of Indian estates is only 234 hectares while the average of non-Indian estates is 633 hectares. It needs no emphasis that irrespective of the size, a manager and certain complementary personnel would be required in all estates. Further the accounting work is centralised in fourteen non-Indian estates and the analysis is made with the aid of mechanical and electronic devices. This reduces considerable clerical work at the estate level. In addition, the span of control is found to be smaller in Indian estates compared to non-Indian estates. This has necessitated the employment of more supervisory personnel in the Indian estates than in the non-Indian estates.

In all non-Indian estates recruitment of clerical and other personnel is made by advertisement by the companies

controlling the estates. However for the selection a Board is constituted in thirteen non-Indian estates. The Board usually consists of two or three estate managers belonging to the same company. These thirteen estates belong to a single company. There is a growing tendency to show preference to dependants in the matter of employment of clerical and other personnel also.

In the Indian estates also the recruitment of clerical and other personnel is made by the company controlling the estate. In five estates recruitment is made by advertisement. In the remaining thirty, recruitment is made by other methods. In five estates preference is shown to dependants.

Managerial personnel are recruited by the company controlling the estate in both groups. The initial recruitment made is as assistant manager. In the non-Indian companies this is done by advertisement. In one estate belonging to a non-Indian company, a division conductor has been promoted as assistant manager and later manager. This is an exception to the usual practice.

In five Indian estates the managerial personnel are recruited by advertisement. In the remaining thirty estates there is no clear policy as to their recruitment. This is because vacancies are very rare and when a vacancy arises a decision is taken as to the best method of recruitment, taking into account the then existing situation.

Qualification for recruitment:

In the early days when plantations were developed, the whole managerial personnel in the non-Indian estates were Europeans. The maximum an Indian could aspire to become was a division conductor. However during the Second World War there was scarcity for European personnel due to their leaving the estates to join the defence forces. This necessitated the engagement of Indians. The emphasis at that time was not on any formal qualification but on the ability to get things done and the capacity to move in the com-

pany of Europeans. At that time trade union movement was practically unknown in the plantations and the Government of the day was largely run by European Civil Servants. Legal knowledge was not an essential part of the qualification of the manager as labour legislation was in the process of development. The ability of handling workers was also not essential since workers were by and large submissive to the manager and manager had been generally following a paternalistic policy.

In those days some Indian estates also employed European managers. With the dawn of independence the European personnel in the estates began to leave. Some estates passed into Indian hands also. Since independence a number of legislative enactments have been brought into effect with a view to improving the lot of workers. The trade union movement began to acquire strength and respectability. This resulted in the employment of more qualified persons who could handle large number of workers in the changed circumstances.

The study has shown that for the direct recruitment of assistant manager a degree was prescribed in all non-Indian estates. In five non-Indian estates a degree in Agriculture was preferred. In seventeen Indian estates a degree in any subject was prescribed as the minimum qualification. Out of the seventeen, five estates require a degree in Agriculture or Botany. Of the remaining, seven estates would require Secondary School Leaving Certificate as the minimum qualification. In the rest no formal qualification is prescribed. This is due to the fact that vacancies of managerial personnel are very rare in these estates. A decision is taken on the qualification as and when a vacancy arises.

The minimum qualification of clerical and supervisory staff recruited directly is a pass in the Secondary School Leaving Certificate Examination in all estates. In the case of technical personnel, qualification in the particular field or trade is usually required.

There is no prescribed qualification for ordinary workers. The only basis of selection for workers is good physique and some experience in work. This is the case with field workers, tappers and factory workers. The Plantations Labour Act prohibits the employment of children below twelve years. For the employment of young persons between the ages of twelve and eighteen, a certificate from a Certifying Surgeon (a surgeon recognised by the Chief Inspector of Plantations) [84] should be obtained and they should carry a token showing a reference to the certificate. Employing women and young persons during night is prohibited by the same Act.

Type of recruitment:

In rubber plantations the recruitment of workers is made either on a permanent or a casual basis. The model standing orders prescribed for workmen by the Association of Planters of Kerala define a permanent workman as "one who has been passed by the employer as fit for work and who has been registered on the check roll for the period of contract".[85] and a casual worker as one "who is engaged for work of a purely casual or temporary character".[86] Casual workers are also called temporary workers. The initial recruitment is often made as casual workers and as and when permanent vacancies arise the casual workers are appointed to these vacancies.

The plantation industry is characterised by the employment of large number of women. This is a feature of all

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84. Chief Inspector of Plantations is the official appointed by the State Government to enforce the provisions of the Plantations Labour Act in the respective State. His powers and duties are prescribed under the Act.

85. Association of Planters of Kerala, *Model Standing Orders for Estate Workmen*, para 3 (1).

86. *Ibid.*, para 3 (2).

TABLE –45

POSITION OF WORKERS AND PERSONNEL

(AVERAGE NUMBER – 1974–75)

	INDIAN ESTATES			NON–INDIAN ESTATES		
	PERMANENT	CASUAL	TOTAL	PERMANENT	CASUAL	TOTAL
Male	3651 (91%) (76%)	348 (9%) (50%)	3999(100%) (73%)	5601 (90%) (64%)	604(10%) (41%)	6205(100%) (61%)
Female	1164 (77%) (24%)	345 (23%) (50%)	1509(100%) (27)	3095 (78%) (36%)	(871 (22%) (59%)	3966(100%) (39%)
TOTAL	4815 (87%) (100%)	693 (13%) (100%)	5508(100%) (100%)	8696 (85%) (100%)	1475(15%) (100%)	10171(100%) (100%)

plantation crops. The proportion of women workers is higher in tea and coffee than in rubber. The employment of husband, wife and grown up children is also a feature of plantations. The details collected from the estates regarding employment are presented in Table 45.

Table 45 shows that eighty–seven per cent of workers and staff in Indian estates was permanent as against eighty–five per cent in the non–Indian estates. Among the male workers and other personnel ninety–one per cent was permanent in Indian and ninety per cent in non–Indian estates. Among women, permanent persons formed seventy–seven per cent and seventy–eight per cent respectively in Indian and non–Indian estates. Of the casual workers, men formed fifty per cent in Indian and forty–one per cent in non–Indian estates. Of the total workers and other personnel, men formed seventy–three per cent in Indian and sixty–one per cent in non–Indian estates.

It has been observed during the study that casual personnel in the managerial, clerical and supervisory category was only two per cent of the total workforce. The rest was employed on a permanent basis. This would show that the bulk of casual personnel belonged to the category of field workers, tappers and factory workers.

Training and development:

There is no formal training for workers or clerical and other personnel in any estate examined for the study. They acquire the necessary training on the job. This is the case with supervisory personnel also. Assistant managers of fourteen non–Indian estates are required to undergo a test in local language before confirmation. Managerial personnel of five Indian estates were trained in a management institute while the manger of one non–Indian estate had acquired qualifications in management before joining the estates. In addition to this training, eight Indian estates and two non-Indian estates had deputed their managerial personnel to the short term course on estate management organised by the Rubber Board.

A source of management development on the technical side is the conferences held by the Rubber Board in the cultivation and processing of rubber more or less annually. It is found that twenty non-Indian and twenty-eight Indian estates had deputed their managerial personnel (usually the manager) to the conferences during the five year period preceding the year of study.

Providing the manager with information on the latest technical advances in rubber is another method adopted for management development on the technical side. There are a number of publications on rubber. A few of them are published abroad. The important publications on the subject in India are the *Rubber Board Bulletin* a quarterly in Ehglish and *Rubber*, a monthly in Malayalam published by the Rubber Board. It is found from the study that all estates belonging to both groups were receiving the Rubber Board Publications and making good use of them.

A few publications are brought out by the rubber plantation industry of Malaysia and Sri Lanka. In the field of rubber plantation industry Malaysia has made spectacular progress. Hence the publications of that country are considered to be indispensable aids for management development on the technical side. Table 46 shows the number and interval of receipt of these publications in the estates.

It would be seen from Table 46 that almost all non-Indian estates were receiving foreign publications.

TABLE – 46

RECEIPT OF TECHNICAL PUBLICATIONS

PUBLICATIONS	NUMBER OF INDIAN ESTATES RECEIVING	NUMBER OF NON-INDIAN ESTATES RECEIVING
Rubber Board publications	35	20
Publications or Malaysia	11	20
Publications of Sri Lanka	5	19

Transfer:

The transfer of managerial personnel arises only in companies owning more than one estate. However the place of employment of workers within the estate may change frequently. This is particularly the case with tappers and field workers. Due to the nature of tapping which is usually either every two or three days, tappers are required to work in different blocks in a week. Tappers are transferred to other divisions also. The place of work of field workers will be the entire estate. As far as practicable they are deployed near their residence. When the company has other estates the supervisory, clerical and other personnel are liable to be transferred to such estates also. Such transfers are not very frequent. The Estates staff Union of South India (ESUSI) which is the only union representing the Staff has come to agreements with managements on these matters. If the company has tea, coffee or cardamom estates, the transfer may take place among these estates also.

The assistant managers and managers are liable to be transferred to other estates. It is a policy of companies producing more than one crop to post the managerial personnel to different estates so that they may acquire experience in different crops. There is no fixed duration for holding the post continuously in one estate.

Promotion:

The customary practice in plantations is to recruit persons as casual workers as and when work is available. When permanent vacancies arise, the casual workers are appointed to permanent posts There is therefore an element of promotion in the arrangement. The length of service is the usual basis for promotion. When vacancies arise permanent field workers are given promotion as tappers, if they have the experience and are otherwise suitable. Similar procedure is adopted in the case of temporary tappers and factory workers. Tappers and factory workers are rarely appointed directly.

The responsibility of granting certain statutory benefits is the basis for giving permanency. The number of workers to be given permanency is very often a point of dispute in the estates. The terminal benefits to be given under the Industrial Disputes Act have something to do with this matter. Under the Act if a person completes employment for a period of two hundred and forty days continuously in a year he is entitled to certain benefits at the time of retrenchment.

Apart from managers and assistant managers, the benefits of promotion are mainly available to supervisory, administrative, hospital and technical personnel. They are conductors, assistant conductors, clerical assistants, teachers, hospital staff and technical personnel. The conductors are usually appointed from assistant conductors. For the conductor there is a higher post of head conductor. The head clerk is promoted from clerical assistants. Similar is the case with the headmaster.

In the case of hospital and technical personnel, promotion may not always change their designation. For example a nurse after promotion may be designated as special grade nurse. This is because usually they have only different grades. Doctors are generally given a higher starting salary at the initial appointment as they have less promotion opportunities.

There are four grades of pay to the supervisory, administrative, technical and hospital personnel. The grades are General Grade, Senior Grade A, Senior Grade B and Special Grade. The four grades are available to the personnel in large estates. In the medium and small estates [87] there are only general grades and senior grades.

87. *Classification of estates made by the Association of Planters' of Kerala for fixing scales of pay of staff.*
Small Estate:– (A) 21 to 60 hectares (both inclusive)
(B) 61 to 141 hectares (both inclusive)
Medium Estate:– 142 to 324 hectares (both inclusive)
Large Estate:– Above 324 hectares.

The assistant managers are promoted to the post of managers as and when vacancies occur. There are different grades of managers; the details have been discussed in Chapter IV. The basis for promotion adopted in the estates is seniority or merit or both. There is no special test for the promotion of managerial, supervisory and other personnel in any estate examined for the study. The bases of promotion are shown in Table 47.

TABLE – 47

BASIS OF PROMOTION OF MANAGERIAL AND OTHER PERSONNEL

BASIS OF PROMOTION	NUMBER OF INDIAN ESTATES	NUMBER OF NON-INDIAN ESTATES
Seniority only	10	Nil
Seniority and merit	25	20
TOTAL ESTATES	35	20

Appraisal:

The extent of appraisal of workers and staff depends upon the importance of the role they play in the management of estates. The role of each field worker is not very important from the point of management and therefore there is not much scope for appraisal. Even when temporary workers are made permanent, the scope for appraisal is limited because it is generally made on the basis of seniority rather than on any other consideration. Similar is the case with tappers and factory workers. Since these categories of workers have very little promotion opportunities, their worth is appraised only rarely.

In the case of supervisory and other personnel, though there is no regularity of appraisal in any estate, it has been agreed with the Estate Staff Union of South India that unless there is any black mark in the service records of the concerned person, his due promotion will not be with held. This has been the accepted practice in most estates.

There is a system of appraisal for assistant managers in the non–Indian estates. An annual confidential report is maintained on each of them. At the time of confirmation and promotion the report is made use of. In the case of managers the visiting agent makes a sort of appraisal of their performance in relation to the fulfilment of various targets assigned to them. This is made use of by the company at the time of confirmation and promotion. Excepting six estates there is no regular system of appraisal of managerial personnel in the Indian group. In these estates the system followed is on the lines of non–Indian estates. Though there is no systematic appraisal in the remaining Indian estates, the ability to fulfil the targets fixed by the company is taken to be the test of appraisal. This is usually taken as the basis for giving higher grades or promotion to the manager. Excepting the appraisal for managerial personnel, there is no appraisal worth mentioning in the estates covered by the study.

Administration of compensation:

The system of wage payment adopted in plantations has certain special features. In fact all systems of wage payments are in vogue in rubber plantations. There are monthly rated as well as daily rated persons. The daily rated persons are paid either time rate or piece rate. A type of incentive wage payment has also been in existence for tappers in most of the estates covered by the study.

Managerial compensation:

Managers and assistant managers are paid monthly salaries. In addition, managers of certain estates are entitled to a commission as a percentage of profit. The salaries are on a sliding scale with annual increments. They are also entitled to medical benefits, free furnished accommodation and servants. Office vehicles are also provided to the majority of managers. The vehicles are either motor cycle or car. They are also entitled to gratuity and provident

fund contribution at varying rates. From the study it has been found that the managerial personnel in the non-Indian estates have better salary and facilities compared to their counterparts in Indian estates.

Remuneration of supervisory, clerical and other personnel:

The supervisory, clerical and other personnel are also paid monthly salary. The salaries and other benefits are based on the agreement between the United Planters' Association (UPASI) and the Estates Staff Union of South India (ESUSI). In addition to salary the agreements cover such matters like recruitment, probation, promotion, transfer, classification and grading of staff. The earliest settlement was in 1948. The settlements are usually revised every three years.

They are also entitled to sickness benefits, servants, travelling allowances, leave with wages, annual bonus and retirement benefits such as provident fund and gratuity. Retirement benefits are governed by the legislative enactments on the subject.

Review of wage fixation in rubber plantation industry:

Before Independence, there was no legislative enactment to regulate the fixing and revising of wages. The wages were generally decided by the forces of demand and supply. At that time there was no trade union worth the name. The Labour Investigation Committee noted the existence of time rate and piece rate wages. Tappers were usually paid on piece rate basis. The tapping task was between two hundred to three hundred trees. In some cases a combination of piece rate and time rate was also in existence.

There was an upward movement of wages after 1945. With the inclusion of plantation industry in the schedule to the Minimum Wages Act, 1948, wages of rubber plantation workers also came within the sphere of State regulation. Accordingly in 1952 the State Government of Travancore-

Cochin (now part of Kerala) Madras (Tamil Nadu) and Mysore (Karnataka) fixed minimum rates of wages for rubber plantation workers. The wages were revised in Madras in 1956 and Mysore and Kerala in 1957. In Kerala the rates were further revised in 1960. In 1961 the Government of India appointed a Wage Board for rubber along with similar Boards for coffee and tea. The Wage Board granted an interim increase of wages to workers in Kerala and Tamil Nadu in 1961. For workers in Mysore the increase was given in 1962. Another increase was given to workers in Kerala in 1964. The Board made the final recommendation in 1966. It was modified by the Plantation Labour Committee of Kerala in respect of that State. The wages fixed by the Board were in operation upto 1969. Subsequent revisions till 1971 took place as a result of tripartite agreements. In 1974 the Government of Kerala revised wages by a notification issued under the Minimum Wages Act. The notification made changes in the payment of dearness allowance which was related to the cost of living index number of Ernaknulam centre and would be revised every three months. In other States the revision took place by tripartite agreements.

There have been occasions when the wages were revised by the decisions of the Industrial Tribunals when disputes relating to wages were referred to them by Governments. Most often revision took place by collective bargaining. Collective bargaining has been a successful form of wage fixation in rubber plantations since Independence. The agreements have been generally concluded at the instance of the State Governments. Tripartite Committees have also been useful in the industry. The Plantation Labour Committee of Kerala has had a successful history of negotiating wages and other matters during the last two decades.

In addition to wages, workers are also entitled to medical benefits, leave with wages, annual bonus, provident fund and gratuity. Women workers are eligible for maternity benefits. The above benefits are usually granted to permanent workers. The details of benefits are discussed in Chapter VII.

Incentive wage payment:

Incentive wage payments are based on the psychological law that human behaviour or effort is largely conditioned by stimulus. The essential aim of all such schemes is to encourage workers to augment productivity by establishing a more or less direct relationship between output and earnings. The advantages of time rate and piece rate wages have been combined to form a number of incentive systems. Incentive wages can be broadly classified under two heads: (1) ordinary forms of incentive wages which are modifications of time rate or piece rate and (2) incentive wages utilising time and motion study.

Rubber is one of the industries in which the concept of payment by results was introduced early in India. Incentive wages prevailing in rubber are a combination of piece rate and time rate. It is applicable to tappers only. The existence of it was noticed by the Labour Investigation Committee in 1946. The minimum wages notification of 1952 of Travancore–Cochin State gave a statutory basis to the system. Under the notification piece rates for tappers are fixed on the basis of a standard output of an averaged worker. Since the yield of rubber tree varies according to the planting material, the rubber area has been arrange into four classes on the basis of yield. For each class a standard daily output and a rate per kilogram of rubber, collected in excess of the standard output, are fixed. There is also a guaranteed minimum time rate. An extra allowance called 'over pound allowance' is given as incentive for the rubber collected in excess of the minimum. As explained in Chapter III, the fields in the estates are classified on the basis of average yield of the previous six months or one year as the case may be. The system was in existence in thirty–three Indian and nineteen non–Indian estates covered by the study.

Demotion and termination:

The standing orders prescribed under the Industrial Employment (Standing Orders) Act for workers and staff

separately provide the procedure for initiating punishment including demotion and termination. The Industrial Disputes Act further provides safeguard against unjustifiable terminations. Under the Standing Orders prescribed for workers and staff, any employee can be dismissed for misconduct. The term misconduct has been elaborately defined in the standing orders. The employee accused of misconduct is given opportunity to defend his position. Usually an internal enquiry will be conducted before taking such action. Dismissal is awarded only for very serious misconduct. Demotion, barring promotion or stopping increment are usually imposed for less serious misconduct.

Retrenchment is also a form of termination of employment. This takes place due to surplus labour or discontinuance of certain operations. Under the Industrial Disputes Act retrenchment should be strictly on the principle 'last come, first to go'. Demotions and terminations have been the subject matter of industrial disputes in a number of estates covered by the study.

3. EVALUATION OF PERSONNEL MANAGEMENT IN RUBBER ESTATES

Training:

The findings of the study in the light of the theory of personnel management show that there is considerable deficiency in respect of training. It is true that at the level of field workers and factory workers, there is less scope for training. However at the tappers level a degree of training would be necessary. In fact the Rubber Board has set up a Tappers' Training School attached to the Rubber Research Institute. But this school is imparting training to tappers employed in small holdings only. In the estates where hundreds of tappers are employed, there is no formal and systematic training. The present arrangement is to allow dependants of tappers to understudy tapping. This has the disadvantage that in the process of training the apprentice tapper is likely to harm some of the trees. Some theoret-

ical knowledge of the rubber tree, particularly its anatomy and physiology, is also necessary for properly training a person to become a good tapper. Tapping is a semiskilled job. Too deep a cut will harm the tree while too shallow a cut will reduce the quantity of latex. Hence some organised attempt for training the tappers is necessary.

At the supervisory level there is considerable scope for training. This may be necessary for assistant conductors and upwards. The present arrangement is to allow them to study things by trial and error. With the growth of strong trade unions, the supervisory personnel who control large number of workers must have sufficient knowledge of legislative enactments on labour. Legislative enactments having a bearing on rubber plantation labour now run to twenty. In addition they must also know the various aspects of scientific cultivation and processing of rubber. There is no internal arrangement in the estates examined for the study to give them training in these matters. The defect in the present arrangement is that they may take more time to acquire the necessary knowledge and meanwhile it is possible that they may unknowingly commit serious mistakes.

As mentioned in Chapter I, the Rubber Board has started a training programme since 1974 for managerial personnel in the estates. The intake of the course is limited to about two dozen persons per year. The training programme covers subjects on the technical side of management. From the study it has been seen that excepting a few estates falling in both groups, there is no training for managerial personnel. They require training on subjects like labour law, modern management practices and modern techniques of planting, maintaining and processing rubber.

The solution to the problem is to organise short term and long term training programmes in plantation management. There should be separate training programmes for managerial and supervisory personnel. The short term training programmes can be organised by group of estates or large companies controlling a number of estates. It should be a collaborative arrangement availing the help of management in-

stitutions and commodity boards. The long term training programmes should be organised by a university. The training could lead to the award of a degree or diploma in plantation management. The combining of the present technical training of the Rubber Board with the management training of a university could also be explored.

Appraisal:

The lack of an objective method of appraisal is also a deficiency noted in the majority of estates. It is true that in the non–Indian estates there is some arrangement for objective appraisal of the performance of assistant managers, but the practice is yet to become widespread in other estates. Further in no estate there is arrangement for objective appraisal of the performance of supervisory, administrative and other personnel. Because of the lack of such appraisal there is the possibility of promotions and transfers becoming less objective and at times creating serious grievances.

CHAPTER - VI

DIRECTION AND CONTROL IN RUBBER PLANTATIONS

1. IMPORTANCE OF DIRECTION IN THE MANAGEMENT OF RUBBER ESTATES

The purpose of direction is to "create an internal environment that will induce subordinates to work at the level of their full capabilities".[88] For proper direction the estate should establish a clear objective. There should be harmony of interest between the employee and the employer regarding the objective. The employee should be made to understand the goal of his position, its scope, purpose and authority.

order is the link in the direction process. Order has been defined as an "instruction by a superior requiring a subordinte to act or refrain from acting in a given circumstance".[89] An order can be general or specific and written or oral. In the estates oral orders take the predominant position. Delegation of authority is also a form of direction.

The instrument of direction is motivation. It is the inducing of people to act in a desired manner. Motivation demands the proper understanding of people. Some writers have noted that satisfied needs are seldom sufficient to motivate. The role of the estate manager is to discover each man's needs as he perceives them and determine and implement a system of inducement. The inducement can be negative or positive. Positive inducements can be both financial and non-financial. Granting increment, bonus and promotion are financial inducements. Non-financial inducements

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88. Harold Koontz and Cyril O'Donnel, *op. cit.*, p. 508.

89. *Ibid.* p. 517.

include making people important, recognising achievement, giving status and providing challenging assignments. Lack of a conducive atmosphere or lack of scope for advancement can be negative inducements. In addition, punishments can also work as negative inducements.

Many writers on management emphasis leadership as an important quality of a successful manager. Leadership has been defined as the "art of inducing subordinates to accomplish their assignments with zeal and confidence". [90] A good leader will cultivate empathy, objectivity and self knowledge. It has been noted that people tend to follow those in whom they see a chance to fulfil their own desires. The emphasis now is on participative rather than authoritarian management. However the choice of technique will depend upon the environment, the people and the needs of the estate.

Communication is an important element in the direction process. Establishing an efficient network of communication is essential in the estate where the place of work is spread over a wide area. The ability to communicate and influence people is an essential attribute of manager. Proper communication is also necessary for establishing standards, measuring performance and correcting deviations. In the estate, communication facilities are used mainly for recruitment, giving operating instructions, ensuring safety and discipline and appraising personnel. One of the duties of the estate manager is to receive, store, process and disseminte information.

2 FINDINGS OF THE STUDY ON DIRECTION

The principles of unity of command and unity of direction have been largely maintained in the estates examined for the study. This has been achieved because most of the estates are located away from the head office of the company and therefore the scope for interference in

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90. Harold Koontz and Cyril O' Donnell *Op. cit.*, p. 557.

the day-to-day management has been less. The manager is in overall control of the estates. It has been noted that the majority of supervisory personnel appear to have been uninformed or unaware of the objective of the estate. In the present context there is less scope for participative management since the standard of education and the level of understanding of the majority of workers and supervisors are low.

The concept of motivation, though laudable, appears to have been applied less in the estates. Five estate managers have attempted to create competition in certain operations of the estates. They have instituted prizes for the best worker who participated in the replanting and new planting programmes. Three of the five estates belong to non-Indian companies.

Of the managerial personnel of the estates studied, only six managers have had some training in management. Of these five managers have undergone short term training at the National Institute for Training in Industrial Engineering. They belong to a group of Indian estates.

There is still an element of authoritarian and paternalistic relationship between the management and the workers, although the intensity of relationship has mellowed down considerably in the recent past. In the majority of estates modern concepts of direction are yet to be adopted. The fact that the worker is dependent on the management not only for work but also for living and medical, educational and other facilities, perpetuate the paternalism. It may take some more time for the attitude to die down.

The justification advanced by the management was that a sympathy would be misconstrued as weakness by labour and the situation would be utilised for putting forward excessive demands. To a direct question in the questionnaire regarding the attitude of managers towards labour, the answer given by the majority of managers was that individually workers were co-operative and generally disciplined. Only when the collective leadership of trade unions incited

them they became indisciplined and hostile. Excepting one manager of an Indian estate, none of the managers of estates considered the workers perpetually indisciplined or hostile. This estate, it may be mentioned, had suffered a lot as a result of labour trouble. The majority of managers appear to treat the position that workers on the whole are playing constructive roles.

Leadership:

The concept of leadership as understood in management literature is not fully applied in the management of estates studied. In the recruitment policy of a few estates the qualities of leadership and smartness have been given importance at the initial selection of assistant managers. However leadership qualities seem to be not widely applied in the actual management. It is understood that certain companies have given informal instructions to their managers not to mingle freely with their workers. Perhaps the fear that such free mingling would lead the workers to demand more and more advances of money might have been one of the reasons for the instruction. The aloofness of managers is more pronounced in the non-Indian estates than in the Indian estates. In fairness it may be mentioned that the usual contacts a manager will have in the estates are with the assistant manager, the head clerk, the conductor, the rubber maker, the doctor and the headmaster.

Communication:

The production points in the estates are everywhere. Therefore the need for establishing proper communication net work is all the more important. In the estate communication takes place in two ways : between supervisors and the manager on the one side and the managing director and the manager on the other.

Both written and oral form of communication are adopted in the estates. Operating instructions to workers are usually given orally. The communication between the supervisory personnel and the manager takes both forms while

the communication between the head office of the company and the estate usually takes the written form. Only on urgent matters are telephone facilities utilised. The study found that telephones were installed in six Indian and fourteen non-Indian estates. In addition, all companies controlling the estates have telephone facilities in the head office. Very few estates have the facility of connecting different places within the estates, such as the factory, the hospital and the residence of the manager with telephones.

There is a regular system of communication between the supervisory personnel and the manager in all non-Indian estates and most Indian estates. In fifteen non-Indian estates and twenty-nine Indian estates this takes place in a book. The assistant manager or conductor writes the matter requiring the decision or attention of the manager in the book and sends it to him. The manager records his decision or noting and sends back the same to them. The number of workers employed and the work done in the division are also reported to the manager in this manner. Separate correspondence books are also maintained in the factory and the hospital. In five non-Indian estates a printed chit takes the place of the book. In the remaining six Indian estates there is no particular form for reporting to the manager and most of them are small estates. The correspondence book serves the purpose of a permanent record. In addition there are periodical reports to the company controlling the estate. The details are discussed under the heading 'Control'.

Issue of orders:

The duties and responsibilites of workers and staff are spelled out in detail in the standing orders prescribed separately for each under the Industrial Employment (Standing Orders) Act, 1946. Standing orders serve as permanent orders for them. On matters of routine nature in most estates there is the arrangement of giving orders in the correspondence book or slip of paper.

In addition to the issue of orders in writing, the estate manager or assistant managers travel within the estate frequently. In the majority of estates they are provided with vehicles. This facilitates them to issue orders and instructions on the spot. In small estates the method of issuing on the spot orders is followed more extensively since the manager can cover the entire area in a day.

Role of the visiting agent and the managing director:

The visiting agent exercises considerable influence and authority in providing direction and control. In all non–Indian estates the regularity of visit is twice a year. In fourteen non–Indian estates there are two visiting agents who rotate between themselves in the matter of visit. In sixteen Indian estates the work is performed by the managing director or a director or consultant. In thirteen of these estates the visit is at least every month. In the remaining three the visit is either once every month or once every two or three months. In another five Indian estates the executive in charge rubber at the head office makes the visit every month. These estates belong to a group of companies. In the remaining fourteen Indian estates there is no regularity of visit.

The managing director / visiting agent / consultant gives necessary direction to the manager on matters of replanting, new planting, disease control and major construction programmes. Their role is in the nature of a directing and controlling officer.

3. EVALUATION OF DIRECTION IN THE MANAGEMENT OF RUBBER ESTATES

Direction is found to be the weak link in the management chain of rubber estates. The concepts advocated by management writers on direction have less relevance in the context of present management practices adopted in these estates. Excepting five estate managers who had introduced some competition and reward in fulfilling certain operations, there appears to be no other method adopted for

motivating the different categories of personnel. It is true that the wages of tappers contain an element of incentive, but it is no longer an effective motivator since the incentive element has been taken for granted as part of wages. The workers and staff get annual bonus. But the bonus as paid now is not related to productivity of individual estates. The bonus agreement is concluded for the industry as a whole. Hence bonus is also not an effective motivator.

Very often the multiplicity of trade unions works at cross purposes with the objectives of the estate. They compete among thmselves to submit higher demands to management with a view to attracting more workers. Most of them are against the introduction of measures intended to increase productivity.

At the supervisory level there is better scope for introducing motivational techniques. As opportunities for promotion are limited in the estates, alternate methods of motivating them have better chance for success.

The network of communications established in the estates covered by the study appears to be generally adequate for issuing operating instructions. Since training and development are neglected areas in the management of estates, communication has also been generally weak in those areas. Leadership qualities also have not been made use of widely. On the whole direction as understood in management literature plays only limited role in the management of estates covered by the study.

4. IMPORTANCE OF CONTROL IN THE MANAGEMENT OF RUBBER ESTATES

The purpose of control is to find out what is done is what is intended and also to verify whether it is done according to plan. Establishing standards of performance is the first step of control. The standards are intended to measure the results and the measurement would involve detecting

and correcting deviations from the agreed path. It is not possible for the estate manager to observe every activity, hence control should be on critical points. The control teshniques introduced in the estate should be objective, economical and easily understood. Budget is perhaps the oldest form of control and budget existed in most estates.

Establishing procedure and guidelines is a traditional method used in Government for the purpose of control. This has been followed in other organizations including estates. In Government it is often enshrined in Manuals. Among the non-budgetary controls, statistical analysis is the most important one. Relevant data are analysed and presented as tables or charts. Statistical analyses have wide scope in the rubber estates.

Standard cost is another control technique. It is worked out by taking the cost of materials and labour and adding a standard overhead. Though standard cost rarely equals actual cost, it will provide a means to measure actual cost. Since cost estimates are made by many estates, this technique can be fruitfully employed. Break even chart can also be used to analyse cost.

Financial and accounting date can be analysed with a view to finding out the profitability of the company controlling the estates. Such analysis can also reveal the position of the company in the rubber plantation industry. Internal audit is the most common technique used in industry and Government. Some estates have introduced internal audit. Statistical Quality Control (SQC) obviates the examination of every individal unit of production. With some training the rubber maker or the factory supervisor will be able to ensure quality of rubber with the aid of SQC.

Electronic Data Processing is fast acquiring currency in industry replacing old control techniques. Electronic calculators and even mini-computers are now becoming common. There is considerable scope in introducing electronic calculators in the estate office where a lot of calculations are to be carried out daily.

Programme Evaluation and Review Technique (PERT) is also a new development aimed at facilitating better control. Under this method every significant event that occurs before the launching of a project is listed out. The sequence of events and their relationships are shown in a network diagram and specific time is set for the completion of each item. PERT has a practical utility in the estates when major construction or new planting or replanting programmes are launched.

Other control techniques that can be applied are management audit and employee attitude surveys. Large companies have scope for introducing even Operations Research.

Human attitudes to control have been widely examined by management writers and it has been found that workers generally dislike controls since controls imply an element of restriction and compulsion. Therefore the estate manager has to devise methods to get the workers accept reasonable system of control. It has been observed that to get the best results subordinates should be encouraged to participate in setting standards.

5. FINDINGS OF THE STUDY ON CONTROL

Budget:

As pointed out in the Chapter dealing with Planning, budget is prepared only by fifty-two estates out of fifty-five. The preparation of budget in the estate consists of estimating yield, income, cost of materials, wage and other remunerations and capital expenditure like expenditure on construction of buildings, roads and factories. Wage rates, rubber prices and cost of inputs and stores will have to be estimated realistically so as to make the budget itself reasonably accurate compared to actuals later on. The main heads of expenditure appearing in a common form of budget are given in the Annexure.

Statistical Analysis:

Statistical analysis of yield and cost of production are regularly carried out in two non-Indian companies controlling fourteen estates. Three other non-Indian companies controlling six estates also carry out statistical analysis. But this is usually done as and when required or at the time of preparing estimates for the budget. In the Indian group, four companies controlling six estates also carry out analysis of data more or less regularly. As in the case of budgets three estates do not carry out any analysis worth the name. In the case of others it is not done in any systematic manner. The past trend is examined by these estates when estimates are made. It may however be noted that usually the analysis is carried out in the head office of the company controlling the estate.

Electronic or mechanical devices are made use of in the head office of five non-Indian companies. In two of these companies there is a section to analyse the data systematically. In the Indian group eight companies controlling twelve estates have purchased electronic calculators to aid them in the analysis. This trend is catching up with other companies and estates also particularly since the prices of calculators began to decline. The offices of fourteen non-Indian estates are also provided with calculators.

Standard cost:

Cost estimate is systematically carried out by all non-Indian estates as part of their routine activities. Since refined data on past trend are available with these estates more or less accurate costing is done in advance. Twenty-two Indian estates also carry out cost estimates. Of these, six estates conduct systematic costing as part of their routine activities. The cost estimates are later compared with actuals. In the non-Indian estates the comparison is made at regular intervals. Indian estates also make comparison with actuals but the regularity is not maintained by all estates. Costing is usually done in the head office of the company controlling the estate.

Internal audit:

All non-Indian companies have a system of internal audit. Six Indian companies controlling ten estates also conduct internal audit from the head office. This audit is different from the annual audit carried out by a chartered accountant as required by the Companies Act. The statutory audit is carried out in all companies examined for the study.

Crop control:

Crop control involves the production and despatch of crop. In large estates this control starts from the point of tapping. In such estates there will be crop reception centres located in the field. The dry rubber content (d. r. c.) of latex is worked out at the centre to decide the wages and incentives to be paid to the tapper. In estates where there is a factory, the day's crop of latex will be poured into the factory reception tank and the d. r. c. will be determined. The total of the d. r. c. of collection centres and the d. r. c. of the factory tank serves as a control measure for the receipt of crop of the day.

Another method of control is the crop statement. It enables the head office to compare the crop estimated for the year and that of the actual production. The statement usually contains the crop harvested on the same day in the pervious year also. It would indicate inefficient tapping if any. Two types of crop statements are sent by almost all estates, one will contain the total production and the other, details of production from different fields or even from different planting materials. The former is more regular. There are estates sending them every week or every ten days. Where the details are sent every month the statement will be considerably elaborate. The regularity of reporting such details to the head office of the company is given in Table 48.

TABLE – 48

REGULARITY OF REPORTING TO THE HEAD OFFICE

REGULARITY OF REPORTING	NUMBER OF INDIAN ESTATES	NUMBER OF NON-INDIAN ESTATES
Daily, weekly and monthly	9	..
Daily, ten days and monthly	7	..
Daily and monthly	5	..
Weekly and monthly	6	..
Weekly only	2	..
Monthly only	6	20
TOTAL	35	20

It would be seen from Table 48 that non–Indian estates were sending the statements every month only while twenty–one Indian estates were sending daily reports to the companies controlling them.

Crop Book:

The crop book is the basic document for information and control in the estate. Generally a separate page or pages will be devoted for noting the details of a field. Details like the planting material, total area under rubber, total number of trees, number of trees tapped, method of tapping, yield obtained and quantity of manure and spraying materials used are recorded in the book. This book properly written up-to-date will provide the details of the field and will be sufficient for comparing the performance of that field over a period of time. In all non–Indian estates the crop book is maintained with the above details. Except three, the crop book is maintained with varying details in all Indian estates also.

Cost control:

The crop statement sent to the head office usually contains the details of cost incurred and the number of workers employed on different items of work. It would show the estimated expenditure on various heads and the actual expenditure up-to-date. This will enable the head office to see whether expenditure is on the increase or decrease and to take remedial action as and when necessary. In the non-Indian estates and a few Indian estates, cost of different items of expenditure per kilogram is estimated in advance on the basis of the previous year's actual cost. This is compared with the actual cost on the item at periodical interval and at the end of the financial year.

The statement sent to the head office will usually show the stock in hand, crop despatched during the period, labour utilisation, details of each item of expenditure, cash position and a summary of the checkroll. The statement, by showing the actual position till date against the estimate, provides a form of control. It will also show the trend in estate cost till date and will enable the management to correct the same. The cost is also reviewed in the majority of estates once in a year. The visiting agent who sees the statement in the head office of the company is able to check the cost and suggest modifications in his report.

Financial analysis:

Financial analysis is also attempted by some companies controlling the estates. Inter company comparison is made rarely. However inter estate comparison is made by companies controlling a number of estates. Table 49 shows the number of estates undertaking financial analysis and the regularity of the same. It would be seen from Table 49 that not all Indian estates are conducting financial analysis.

TABLE – 49

REGULARITY OF FINANCIAL ANALYSIS

REGULARITY OF FINANCIAL ANALYSIS	NUMBER OF INDIAN ESTATES	NUMBER OF NON-INDIAN ESTATES
Monthly	17	16
Annual	5	4
Not regular	8	..
Nil	5	..
TOTAL	35	20

Manager's control:

In most of the large estates the manager has wide discretionary powers. He is considerably independent if the company has a number of estates. If on the other hand the company has only one estate the discretionary powers are very often exercised by the managing director of the company. The manager's performance is largely judged by the company on the basis of his ability to bring the actual cost within the estimated cost. Due allowance is however given to unforeseen circumstances.

The manager will usually receive a report from the assistant manager or division conductor regarding each day's work in the division. The report will usually give such details as the crop obtained, the progress of cultivation and upkeep operations and the number of tappers and field workers employed. This will enable him to make enquiries regarding the deficiency, if any. It also serves as a form of daily control.

Internal control:

Some sort of internal control on payment of money and stores in exercised in estates examined for the study. In the estates the accounts are written up by clerical assistants and supervised by the head clerk in case there is a

post of head clerk. Where the clerks are more than one, the work is subdivided among them. One of the clerks or the head clerk will be in charge of the cash book. However the sanction of the manager is required for the payment of cash every where. The cash is kept invariably with the manager.

The manager and clerks function in the same building in all estates covered by the study. In the majority of estates the manager would be sitting in an adjoining room in the building where he can oversee the work of the clerks and the head clerk.

All estates sell rubber through the head office and the money required by the estate is received from there. The manager will request for money at a regular interval which is usually every fifteen days or a month. Such requests are often supported by a statement of proposed expenditure. This serves as an effective check.

Physical check:

Physical check is carried out in all large estates where the activities are spread far and wide. Apart from the field, the checks are carried out in the store, the factory, the hospital and the school. It is the general practice of the manager to visit the field in the morning and attend office in the afternoon. However when pressing problems arise the routine may change to suit the convenience. In most large estates the manager usually visits the factory at least once a day. However the stores, the hospital and the school are visited only once in a while. In the case of the store, the frequency of visit is considerably more while it is less in the case of hospital and school.

Stores control:

In large estates separate stores are maintained under the charge of a store keeper. Where a factory exists, store is kept usually as part of it. In small estates one of the clerks attends to this duty also. The arrangement in large estates is to give an authorisation signed by the mana-

ger whenever an item is to be obtained from the store for which a printed slip is generally used. This is filed by the store-keeper. Bin cards or other modern forms of store control techniques are not adopted in any of the estates examined for the study. Generally a register is maintained which would show the current position of items in the store.

Control by the head office:

The method generally adopted by the head office to control cost is to compare one's with that of the other estates of the company. Public limited companies generally publish the estate cost of production in the balance sheet and profit and loss account. This is made use of by other companies for comparing their cost.

By providing more or less correct estimate of cost the company controlling the estate can to a very large extent control the movement of cost. The estimate of cost is generally made prior to the beginning of the financial year. Generally the board of directors of the company takes the decision on the basis of the report of the managing director who in turn makes the recommendation on the advice of the visiting agent or the manager. However the manager of the estate will supply the detailed calculations and estimates.

The other forms of control exercised by the head office are by the visit of managing director, inspection of the visiting agent, internal audit and the scrutiny of various statements received from the estate. It has been observed during the study that the head office of one company is located within the estate controlled by that company. In the case of all others the head office is located far away from the estate. In the case of the above company the location of estate happened to be very near a municipal town connected by a State highway.

6. EVALUATION OF THE CONTROL TECHNIQUES ADOPTED IN RUBBER ESTATES

From the study it is found that control is the only aspect of estate management which closely agrees with the

theory of management. The control techniques adopted in the estates largely satisfy the theory of management. It has been noted that the managers of estates examined for the study have followed in most cases the theoretical prescription 'controlling the critical points'. This is largely correct in regard to non-Indian estates, particularly those belonging to companies with estates in other countries. Such companies are able to assimilate modern techniques of control more quickly than others. Some of them use sophisticated equipment in their head offices. In certain Indian estates there appears to be some excessive control also. Some Indian estates require the managers to submit reports daily, weekly or every ten days and monthly. This control appears to be a little too much. In certain Indian estates on the other hand there is inadequacy of control also. The form of control now in operation in the estates has been largely developed by the non-Indian companies and subsequently followed by Indian companies.

For adequate internal control it would be desirable to record each day's factory production and relate it to a particular day's crop. The existing crop book can be modified with additional columns for field and factory reception weights separately and final weight after processing. This will facilitate the detection of unexplained or abnormal loss of weight including loss due to pilferage or careless handling.

The present system of stores control has certain disadvantages. In the first place it is not possible to find out quickly which item is in short supply. Secondly the stores register may become very large making the tracing of stores items difficult. It is suggested that the stores register be replaced by stores card noting each item on one card. The stores card may be placed along with each item. This will enable the store-keeper to re-order an item easily and also to find out which item is fast moving. The estate office can also keep a set of cards on each item.

It would also be desirable to use duplicate copies of the form used for requisitioning stores item so that one copy

may be kept in the office and the other with the store keeper. It is also desirable to write the stores ledger in the estate office and the store keeper can be entrusted with store keeping only. Only responsible officers should be empowered to issue stores items.

CHAPTER – VII

LABOUR WELFARE AND INDUSTRIAL RELATIONS

A feature of plantation industry is the management of labour force living in isolated and often closed communities. Most often the plantation is a self–sufficient unit of production and processing. The remote and hilly location of most plantations makes mechanisation difficult. This has led to the employment of labour in large numbers. Unlike traditional agriculture, a plantation cannot depend upon casual labour only. Hence the planter is forced to provide living facilities on plantations to a permanent or semi–permanent labour force throughout the year. As a result a number of welfare amenities and facilities have to be provided to the workers and their families. In the past workers had to be induced to take up employment in those remote places by additional amenities and facilities. For a long time there was no statutory obligation on the planter to provide welfare amenities and facilities to workeres. The statutory requirements which came later forced small plantations to provide the amenities and facilities already available in large ones.

1 LABOUR WELFARE

Legislative enactments on labour welfare:

The only specific legislative enactment covering plantations before Independence was the Tea District Emigrant Labour Act, 1932. It was intended to regulate the employment of labour in the tea gardens of Assam. Though the Workmen's Compensation Act, 1923 applied to plantation workers, it did not confer any substantial benefit to them as accidents were rare in plantations. The Payment of Wages Act,

1936, though applied to plantations, was concerned with the mode of payment of wages only.

The Labour Investigation Committee (Rege Committee) noted that the conditions of life and employment on plantations were different from those in other industries and recommended the creation of a Plantations Labour Code. The Plantations Labour Act, 1951 was enacted on the recommendations of the Committee.

As pointed out in Chapter I, Plantations Labour Act applies in the first instance to tea, coffee, rubber and cinchona plantations admeasuring 10. 117 hectares or more and employing thirty or more persons* on any day in a year. The State Governments are empowered to apply the Act to plantations raising other crops also. Accordingly the State Government of Kerala has applied the Act to plantations of cardamom and cocoa. The Plantations Labour Act was amended in 1960 to prevent the fragmentation of plantations with a view to avoiding the application of the Act. By the amendment, the State Government has been empowered to extend the provisions of the Act to small plantations of less than 10. 117 hectares in extent, if such plantations were part of larger ones (more than 10. 117 hectares) which existed at the commencement of the Act and were covered by its provisions.

The Plantations Labour Act defines a worker as a person employed in a plantation for hire or reward not exceeding three hundred rupees per month. This was enhanced to Rs. 750 by an amendmet to the PL Act. But a medical officer or a person primarily employed in a managerial capacity irrespective of monthly salary will not come within the definition. Persons employed temporarily for construction of roads, buildings, bridges or canals also will not come within the definition.

The Plantations Labour Act contains provisions relating to health, welfare, working hours, limitations of employment,

* This was later reduced to 5 hectares and 15 workers by an amendment to the PL Act.

leave with wages, maternity benefits, provisions for enforcing the legislation and the penalties for the contravention of the Act.

Medical facilities:

The early history of plantations is full of instances as to how planters had to adandon their estates because of the scourge of malaria. In those days workers had to be brought from distant places for employment. Therefore a reputation of the estate as a place free from malaria was necessary to induce them to stay and work. Repeated infection of malaria left the workers incapacitated for hard work. This naturally affected the production of the estates. Therefore the planters in their own enlightened self-interest initiated measures to eradicate the dreaded disease. In that respect they were the pioneers in India. Intensive work was undertaken for the purpose in most estates in Travancore, around 1930. For joint action, planters formed a number of medical associations in South India. These measures had good effect on the health of the workers.

A systematic medical aid was also initiated by large planting companies and associations of planters. However the standard of medical aid was not uniform or comparable with that of today. The Labour Investigation Committee noted that workers in South Indian plantations were given the benefit of free medical aid. But the kind of medical aid varied widely from a few drugs dispensed by the manager or clerk to careful hospitalisation and special attention. The Committee found that the managers of rubber estates had made some arrangements either with the doctor in the Government hospital or some private practitioner to render medical attention to labour. At the time of the enquiry the planters were under no obligation to provide medical facilities to the employees. Since then the Plantations Labour Act and the supplementary Labour Rules have brought into effect elaborate regulations for medical facilities. The Act and the Rules provide for different types of hospitals according to the level of employment. If the number of workers is less than two hundred the employer is required to

maintain a first aid box under a qualified compounder with facilities in a nearby hospital for treatment of workers. The estates employing two hundred to thousand workers are required to maintain a dispensary. Estates employing more than thousand workers are required to have their own Garden Hospital. A few estates employing more than thousand workers can combine and set up a Group Hospital in one of them. The study has revealed the following facts regarding medical facilities.

TABLE – 50

TYPE OF HOSPITAL/DISPENSARY

TYPE OF HOSPITAL/DISPENSARY	INDIAN ESTATES	NON-INDIAN ESTATES
Garden Hospital & Group Hospital facility	..	1
Garden Hospital & Dispensary	..	2
Garden Hospital only	5	6
Dispensary & Group Hospital facility	..	4
Dispensary only	15	7
Without Garden Hospital, Dispensary or Group Hospital facility	15	..
TOTAL	35	20

It may be noted that out of thirty–five Indian estates examined for the study, twenty–four were employing less than two hundred workers and hence were not required statutorily to maintain a Garden Hospital or Dispensary. However some of them have provided dispensaries within the estates. Two of the estates are not covered by the provisions of the Plantations Labour Act as they employ less than thirty workers.

Maternity benefits:

The Royal Commission on Labour had recommended that maternity benefits should be provided to women plantation workers by legislation. The Rege Committee found that a number ot estates in South India had been paying maternity benefits of varying amount. The Committee noted that women workers were not employed in large numbers in rubber plantations. Nevertheless the Committee found maternity benefits being paid by estates located in Mundakayam, South Travancore and Malabar areas. The Committee also noted that some estates provided a woman attendant for the mother for five to ten days. At that time there was no statutory obligation on the estates to provide maternity benefits. Statutory responsibility came with the enactment of the Plantations Labour Act. In addition to the provisions contained in that Act, separate Central and State Acts have also been brought into force on the subject. Since the Central Act is more comprehensive, the provisions of that legislation are implemented in the plantations.

From the study it has been found that maternity benefits had been paid in nineteen non-Indian estates in 1974-75. In the remaining one estate there was no claim for maternity benefits during that year. The estate is also a small one. During the same year twenty-two Indian estates had also paid maternity benefits. Of the remaining thirteen, in ten estates there were no claims for maternity benefits in 1974-75. In the other three estates there were no women workers in 1974-75.

Housing facilities:

Since plantations were developed at inaccessible places as isolated settlements, the planters had to provide housing facilities to workers. The facilities provided were not uniform or adequate in all cases. The Rege Committee noted that the managements in South Indian estates were providing rent free accommodation to permanent workers.

The question of establishing standards in the construction of houses came before the First Session of the Industrial Committee on Plantations. At the Third Session of the Committee it was agreed that the employers should provide housing facilities to all workers within a reasonable period. Certain standards for building houses were also laid down. The Committee recommended that employers should aim at providing eight per cent of the population on plantations with house every year.

With the implementation of the Plantations Labour Act, plantation labour housing took a different character. The Act and the Rules make it obligatory on the management to provide rent free houses to the workers and their families. The study has shown that housing facilities had been provided in all non-Indian estates and thirty-two Indian estates. In the remaining three Indian estates there was no resident worker in 1974-75. Table 51 shows the extent of housing facilities provided in the Indian and non-Indian estates in 1974-75.

TABLE - 51

HOUSING FACILITIES PROVIDED IN THE ESTATES

	INDIAN ESTATES	NON-INDIAN ESTATES
Housing facility as a percentage on permanent workers in the estates	62%	84%
Housing facility as a percentage on total workers in the estates	54%	72%

It may be mentioned in this connection that according to the Plantations Labour Act housing facilities are to be provided to those workers 'who reside in the plantations'[91] only. Hence the explanation given for not providing the facility to all workers was that the remaining workers were

91. *Plantations Labour Act*, 1951, Section 15. (This was changed later.)

not residing in the estate. Table 51 shows that more workers were given housing facilities in the non–Indian estates than in the Indian estates.

Other welfare amenities and facilities:

The Rege Committee found that in Central Travancore some estates had provided piped water, while others were dependent on wells or streams for water supply. The Committee noted that in many estates wells and streams supplying water were situated far away from the workers' quarters. It was also noted that some estates provided latrines for every block of five to six rooms. Since the passing of the Plantations Labour Act, elaborate rules have been brought into effect for the provision of latrines and urinals and also for providing wholesome drinking water in plantations. It has been noted during the study that latrines and urinals were provided close to living quarters in most estates where housing facilities existed. A few estates have also provided piped water. The workers in the other estates depended on wells or streams for water supply.

Another provision in the Plantations Labour Act relates to recreation. All estates covered by the Plantations Labour Act are required to provide indoor recreations and outdoor recreation where open space is available. It has been noted that except three estates, where there was no resident worker, in all others some arrangement had been made for indoor recreation. The facilities provided include cards, news papers and radio. In large estates facilities for outdoor games were also provided.

According to the same Act the employer has to make arrangements for running canteens in plantations wherein one hundred and fifty or more workers are ordinarily employed. From the study it has been found that canteens existed in five Indian and seventeen non–Indian estates. Of the five canteens in the Indian estates, three were run by contractors and two by workers. Of the seventeen canteens in the non–Indian estates twelve were run by contractors, two by management and workers jointly and three by workers.

Another statutory provision relates to the setting up and maintaining of creche for the welfare of the young children of working mothers. According to the Plantations Labour Act a creche is to be maintained by the employer if the number of women workers is fifty or more. Creche had been maintained in eighteen non–Indian and seven Indian estates.

According to the same Act employer has to provide educational facilities if the number of children aged between six and twelve exceeds twenty–five. However if there is a school run by the Government or a Local Body within three kilometres or if the employer pays some tax or cess towards education, such facilities need not be provided in the estate. The study has brought out that eight Indian and nine non-Indian estates had provided elementary schools within the estates. The supply of weather protectives is also a responsibility of the employer under the same Act. These are provided by all estates covered by the Act and examined for the study.

Leave and holidays:

Under the Plantations Labour Act an adult worker is entitled to one day's leave with wages for every twenty days of work, while adolescents and children[92] are entitled to one day's leave for every fifteen days of work. Under an agreement concluded between the United Planters' Association of South India and the Estate Staff Union of South India, the staff members of estates are entitled to thirty days' privilege leave with pay for every eleven months of service. The staff categories in the estates include personnel like conductors, assistant conductors, supervisors,

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92. *Adolescent and child:*
Adolescent: — A person aged fifteen years or above but less than eighteen years.
Child: — A person aged twelve years or above but less than fifteen years.
(Plantations Labour Act, 1951, Sections 2 and 24.)

head clerk, clerical assistants, rubber maker, assistant rubber maker, medical personnel, electrician, mechanics and drivers.

The Plantations Labour Act provides for the grant of sick leave with wages to the workers to the extent of fourteen days in a year at the rate of two thirds of daily time rated wages for certified sickness. By the agreement mentioned above, the staff members are entitled to a maximum of thirty days sick leave with full pay in a calendar year for certified illness. The certificate should be obtained from the estate medical officer or a medical practitioner approved by the manager of the estate. By the same agreement the staff members are eligible for seven days' casual leave and three days' leave during religious festivals on full pay. Under the National and Festival Holidays Act, the workers and staff are entitled to seven paid holidays in Kerala and Karnataka and eight days in Tamil Nadu every year. The workers are not entitled to any casual leave. These benefits are granted in the estates covered by the Plantations Labour Act and examined for the study.

Terminal benefits:

Gratuity:

There is no mention of any gratuity scheme in the Report of the Rege Committee. The first scheme for the payment of gratuity to rubber plantation labour was introduced in 1956 as a result of an agreement reached between management and workers of plantations in the Malabar region of Kerala. In 1957 the Estate Staff Union and the United Planters' Association of South India reached an agreement by which the staff employed in UPASI's member estates were granted gratuity. In Kerala a regular gratuity scheme was introduced in February 1962 on the basis of an agreement concluded between employers and workers.

In 1970 the Government of Kerala passed a Gratuity Act. In 1972 the Central Government also passed a similar

Act. According to the Central Act gratuity is to be paid at the time of superannuation, retirement, resignation, death or disablement. The gratuity is fifteen days' wages for every completed year of service. The maximum gratuity is twenty moths' wages. The qualifying period for gratuity is five years' continuous service. Gratuity scheme existed in all estates covered by the study.

Provident Fund:

Employees Provident Funds Act was extended to rubber plantations in 1957. The Act applies to plantations employing twenty or more persons only. The rate of contribution of the employer is six and one-fourth per cent if the number of workers is twenty but less than fifty and eight per cent if the number is fifty or more. The Provident Fund Scheme existed in all non-Indian estates and thirty-four Indian estates. The remaining one Indian estate employed less than twenty persons in 1974-75. Table 52 shows the number of workers benefited by the Scheme in Indian and non-Indian estates.

TABLE -52

NUMBER OF WORKERS COVERED BY THE PROVIDENT FUND SCHEME

(1974-75)

	INDIAN ESTATES	NON-INDIAN ESTATES
As a percentage of permanent personnel of estates	93%	98%
As a percentage of total personnel of estates	82%	84%

It will be seen from Table 52 that a higher percentage of workers and staff is covered by the Provident Fund Scheme in the non-Indian estates than in the Indian estates.

Bonus:

As a class, rubber plantation workers were one of the earliest beneficiaries of annual bonus in India. Almost all estates have been paying annual bonus to workers since 1947. The rate of bonus is generally decided by tripartite meetings convened by the Government. The agreement is usually recorded in the form of a Memorandum of Settlement under the Industrial Disputes Act. The rate of bonus once agreed is usually paid by all estates.

Working hours:

According to the Plantations Labour Act. an adult worker should not be required to work for more than fifty-four hours a week and adolescents and children for more than forty hours.* Since the Minimum Wages Act prescribes only forty-eight hours of work a week for adult, the provisions of that Act are implemented in plantations.

The employer is also required to give daily intervals so that the worker is not required to work continuously for more than five hours. A day of rest in a week is also required to be given to workers.

Mode of payment of wages:

The Royal Commission on Labour had noted the system of annual settlement. According to the Commission the disadvantages of the system outweighed the advantages. The Rege Committee stated that the settlement of wages once in a year was the common practice in plantations. There was an arrangement to pay *Chelavukasu* [93] in the meantime. During emergencies workers turned to *Kanganies* for money. Under the system of annual settlement the worker's weekly earnings were credited and *Chelavukasu* was debited in the checkroll and the balance was carried forward for disbursement after

93. *Chelavukasu* is a Malayalam word meaning 'amount required for day-to-day expenses'. The word has the same meaning in Tamil also.

*changed subsequently.

clearing the dues to the *Kangany* at the end of the employment period which was usually ten months. The Rege committee found monthly and weekly settlements also in vogue in a few estates. The Committee stressed the need for abolishing the annual settlement as the system was intended to bind the workers to the *Kangany* and the estate for the year. The labour unions agitated against the system and it was made one of their programmes in the early days. In Tamil Nadu the annual settlement was abolished in 1958 by an agreement. In Kerala and Karnataka States too similar agreements were concluded. As a result of abolition of *Kanganies* and absorption of them in the cadre of labour supervisors, the need for annual settlement and for the recruitment of workers from outside has not been felt much.

Deduction from wages for trivial offences and payment in kind were practised in the early days. The First Session of the Industrial Committee on Plantations decided that deductions from wages for offences committeed by workers should be abolished. At the Fifth Session of the Industrial Committee it was decided to discontinue the payment of wages in kind and to convert all such payments into cash. The present practice in the estates examined for the study is to pay wages every week in cash.

Though the workers are paid and their wages settled every week, the staff members who are salaried are paid at the end of every month. As pointed out in Chapter V, there are four grades in the salary structure of the staff. The salary also varies slightly according to the size of the estate.

2. INDUSTRIAL RELATIONS

Trade union movement:

The growth of trade unions has been very slow in plantations. The isolated nature of plantations has made contact with trade union leaders operating in urban areas difficult. This has been an important reason for the slow growth. The mental and psychological isolation which is due

to the low level of education and income is also a reason for the same. The employment of large number of women and young persons has also affected the growth of unions. Women and young persons are generally less-informed and hesitant to join unions. Migrant nature of workers, seasonal employment and surplus labour available in the rural sector are the other reasons. The largely paternalistic and authoritarian nature of management in the past has also been a contributory factor for the slow growth.

In spite of the foregoing inhibiting factors there are certain factors which have favoured trade union movement in plantations. Unlike traditional agriculture, plantations bring together large number of persons working side by side on similar conditions. They are often required to live together in colonies. Such circumstances foster comradeship and a consciousness of common problems which lead to collective action. The permanent and contractual nature of employment, cash wages and identical work are the other factors encouraging the development of unions. The organization of work in plantations is similar to industrial work. It involves a rationalised system of production with capitalisation and some mechanisation. This is also a reason conducive to the growth of unions.

The intervention of Government with a view to improving the conditions of labour has had its influence in plantations also. Similarly the passing of various legislative enactments conferring rights on the workers has its impact in the development of trade unions. This has opened up a field for professional trade union organizers. The emergence of Government as a direct employer has also influenced the growth. Government is generally a model employer and unions can get more concessions from the Government through political influence. This has a favourable effect on the growth of unions in private plantations in the vicinity of Government estates.

The Rege Committee found no estate with a trade union in the sample of estate selected for their enquiry.

However the Committee received information from another estate which had a union with a small membership. The estate informed the Committee that the union officials co-operated with the management in settling disputes. Conditions improved by the time of the enquiry of the Minimum Wages Committee of Travancore–Cochin in 1952. The Committee gave the addresses of twenty–two plantation unions in the then State of Travancore–Cochin, of which twenty–one were registered. Of the twenty–one unions, four were registered in 1947, six in 1948, two in 1949, eight in 1950 and one in 1951. Most of them were operating in rubber and tea plantations.

In 1967 the National Commission on Labour appointed a Study Group for coffee and rubber plantation industry. The Study Group was able to collect the addresses of about seventy trade unions operating in Kerala. The unions were mainly engaged in rubber plantations. Most of them were affiliated to national federations associated with important political parties of India. The plantation unions have now acquired a strength more or less equal to that of industrial unions in the State of Kerala.

After Independence political parties began to take more and more interest in trade union organizations in plantations. This led to the formation of rival unions affiliated to political parties in certin areas. In recent years the consciousness of their rights has been evident among plantation workers in common with others. This consciousness has also led them to join trade unions in large numbers.

With the emergence of strong trade unions, the industrial peace in plantations began to be disturbed frequently. The Plantation Inquiry Commission found various reasons for the disharmony. According to the Commission the reasons were related to profit sharing, fixing of task, reinstatement of dismissed or discharged personnel, leave with wages and retirement benefits. Disharmony also arose out of certain other reasons such as refusal to grant interviews, refusal to negotiate, favouritism, discriminative treatment, evasion in implementing the Plantations Labour Act, dismissal of workers without cause and supporting one union against another.

The illegal methods resorted to by workers sometimes to express their grievances also added to disharmony.

From the study, it is seen that multiplicity of trade unions is a problem in rubber plantations. There were estates with upto six unions in 1974–75. Trade unions functioned in all non–Indian estates while there were seven Indian estates without any union. These estates are comparatively small. The details are shown in Table 53.

TABLE – 53

NUMBER OF UNIONS IN THE ESTATES STUDIED

(1974–75)

NUMBER OF TRADE UNIONS		INDIAN ESTATES	NON–INDIAN ESTATES
No union	—	7	..
One union	—	8	2
Two unions	—	6	2
Three unions	—	7	5
Four unions	—	5	6
Five unions	—	2	2
Six unions	—	..	3
TOTAL	—	35	20

The extent of membership is also worth examining. Table 54 shows the position.

TABLE – 54

EXTENT OF MEMBERSHIP OF WORKERS IN THE UNIONS

1974–75

EXTENT OF MEMBERSHIP OF WORKERS IN THE UNION		INDIAN ESTATES	NON–INDIAN ESTATES
All workers	—	8	9
90 to less than 100%	—	5	4
80 to 90%	—	4	..
70 to 80%	—	4	..
60 to 70%	—	1	1

(Contd.)

50 to 60%	—	2	..
Strength not known, but majority of workers	—	4	6
No trade union	—	7	..
TOTAL	—	35	20

It will be seen from Table 54 that the extent of unionisation is more in the non-Indian estates than in the Indian estates.

Trade union recognition:

In India the basis for organising and registering trade unions is laid down in the Trade Unions Act, 1926. There is no legal responsibility on the employer to recognise a trade union for the purpose of negotiation. However, the Code of Conduct prescribed in this regard is generally followed by the employers. According to the Code a union representing not less than fifteen per cent of workers in an estate may be given recognition for representing in collective bargaining or grievance procedure. This has been generally followed by the management of estates covered by the study.

Employers' organization:

Employers' organization is the principal agent for bargaining and administering collective agreements in plantations. Unlike employees' organizations, which came into being mainly since Independence, the employers' organizations have been in existence even before the present century. The most important employers' organization in South India is the United Planters' Association (UPASI). UPASI is an organization of tea, coffee, rubber and cardamom planters. This organization has been in existence since the second half of the last century. The Association of Planters of Kerala which is an important organization so far as rubber planters are concerned, has been in existence over the last fifty years. Before the re-organization of Kerala, the Association was known as the Association of Planters of Travancore. Some district associations of planters like the Mundakayam

Planters' Association have also been in existence from the beginning of the present c entury.

These organizations have been engaged in labour matters ever since they started functioning. In the early days when the problem of availability of workers was serious, they had undertaken recruitment of workers from different parts of the country. In fact the UPASI had a Labour Department in those days. With the passing of legislative enactments conferring rights on workers, the organizations of employers had to devote their attention more to industrial relations. The associations now negotiate agreements with trade unions on industry–wide issues and represent emloyers in various tripartite committees set up by the Central and State Governments.

Role of tripartite committees:

Since Independence considerable attention has been paid to the promotion of industrial peace and the creation of favourable atmosphere for the growth of healthy labour management relations. With a view to realising this end, the Central and State Gsvernments have enacted laws for speedy settlement of disputes. The Governments have also taken measures for the creation of suitable atmosphere for the maintenance of cordial relations between workers and employers and also for the promotion of direct negotiations. Accordingly the Governments have constituted an Industrial Committee on Plantations at the Centre and Tripartite Committees / Boards in the states for settling major disputes. The Committees and Boards have been able to resolve a number of industry-wide disputes. These efforts have made substantial contribution towards the promotion of industrial peace in the plantation industry.

In pursuance of the recommendations of the Royal Commission on Labour, the Government of India initiated in 1942 a series of Tripartite Conferences. In January 1947 the Government convened a meeting of the representatives of employees and employers of plantations. This was the first meeting of the Industrial Committee on Plantations. Till

1974–75 the Committee had fourteen sessions. The Committee consists of representatives of the employers, the employees and the Government. The Committee had been responsible for deciding matters such as prescribing standards for medical care, drafting the outline of Plantations Labour Bill, prescribing specifications for house construction, fixing a date for enforcing the Plantations Labour Act, considering the draft rules framed under the Plantations Labour Act, extending Employees' Provident Funds Act to plantations, introducing a Code of Conduct to plantation industry and appointing a national Wage Board for plantations. The Industrial Committee on Plantations has been playing a very useful role by focussing attention on important issues affecting plantations and bringing together employers and employees at a national forum.

The State Governments have also set up various Committees and Boards representing employers and employees. In the State of Kerala, the Government has set up a Plantation Labour Committee which considers important issues relating to plantation industry. In Tamil Nadu and Karnataka also similar committees are functioning. Usually the Labour Commissioner of the State convenes the meeting of the Committee. Eventhough the functions of the Committee are advisory in nature. Its decisions have considerable force on the industry. These committees have been instrumental in settling important issues relating to wages, bonus and gratuity.

The International Labour Organization has a committee called the Committee on Work on Plantations. The Committee is also tripartite in nature Till 1974–75 six sessions of the Committee were held. The first Session of the Committee was held in Bandung, Indonesia, another Session in Havana, Cuba and the remaining Sessions at its headquarters in Geneva. The Committee was responsible for framing a number of Conventions and Recommendations on various aspects of employment and living conditions on plantations. The Conventions and Recommendations form the main basis for legislative enactments relating to plantation labour in the member countries. At the instance of the Committee a

world-wide study of plantation labour was undertaken. The results of the study were published in 1966.

Other legislative enactments covering plantations:

The Industrial Disputes Act is the premier labour legislation in India. The Act applies to plantations also. The Act has laid down the procedure for resolving industrial disputes. At the factory or plantation level the formation of a Works Committee has been prescribed for the purpose. From the study it has been found that Works Committee existed only in two estates, one Indian and another non-Indian. The reply received from other estates showed that the Works Committee reduced the importance and the role of trade union officials. Therefore they were not very co-operative in the functioning of the Committee. It may be mentioned here that there is no statutory compulsion on the estate for forming the Works Committee. When a factory functions in the plantation, the Factories Act applies to the workers in the factory also. The Minimum Wages Act has been extended to rubber plantations and the Government of Kerala has notified minimum wages under the Act. If the number of persons employed in the estate is hundred or more, Standing Orders will have to be certified under the Industrial Employment Standing Orders Act. However a number of estates employing less than hundred persons have also prescribed Standing Orders separately for workers and staff. From the study it has been seen that Standing Orders had been prescribed in twenty non-Indian and thirty-two Indian estates. The most recent legislative enactment on labour is the Equal Remuneration Act, 1976. This has also been applied to plantations.

3 EVALUATION OF LABOUR WELFARE AND INDUSTRIAL RELATIONS

Though most operations in a plantation are similar to the operations in an agricultural farm, plantation workers are better placed in many respects than agricultural workers. In the first place plantation workers had the benefit of a separate protective legislative enactment, i. e., the Planta-

tions Labour Act, 1951. In fact India is the first country to enact a separate legislation for plantation workers. [94] Though plantation workers may not compare well with industrial workers, they are considerably better off when compared with agricultural workers.

The welfare facilities and amenities provided by most plantations are comparable with similar facilities available in most industrial units. Plantation workers are not generally affected by occupational diseases. Accidents are also rare in plantations. In general, the atmosphere in which they live is also better compared to the slums in which industrial workers in most cities have to live.

The study has revealed that the quality of welfare facilities is better in large estates than in small ones, The non–Indian estates generally provide better facilities than most Indian estates.

The various legislative enactments on labour referred to above are passed by the Central Government and enforced by the concerned States. As a result there is some variation in the enforcement of their provisions in different States. The extent of enforcement depends upon the earnestness, strength and efficiency of the enforcing officers and the travelling facilities provided to them. To a certain extent it also depends upon the strength of trade unions in the State. The enforcement of statutory provisions is generally better in Kerala than in Tamil Nadu or Karnataka. This may partly be due to the strength of trade unions in that State.

Outside leadership is the mainstay of trade unions in rubber plantations. Multiplicity of unions is a problem in most estates. As trade unions are affiliated to political parties their membership strength fluctuates with the fortunes of each party. Usually the ruling party will be able

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94. International Labour Organization, *Plantation Workers* I. L. O., Geneva, 1966, p. 75.

to attract more workers by offering concessions. There is no independent trade union in rubber plantations.

The extent of unionisation in rubber plantations is more in Kerala than in Tamil Nadu or Karnataka. In Kerala most unions are working for a particular plantation crop. It is not uncommon to find a separate union for a single estate. The strength of trade unions in rubber appears to be better when compared with the strength of trade unions in tea, coffee or cardamom plantations. The leadership for the unions in rubber comes from members of Parliament and the Kerala Legislature. As a result, trade unions of rubber plantation workers are represented better in the decision making forums in Kerala, than other plantation unions.

The literacy level of rubber plantation workers is also better than that of other plantation workers. This is due to the fact that about ninety per cent of rubber plantation workers is in Kerala and Kerala has a higher literacy rate. On the whole rubber plantation workers are in a slightly better position in regard to the facilities available, strength of trade unions and literacy level of workers in general. During 1974–75, they were getting slightly better wages than most other plantation workers in South India.

CHAPTER – VIII

FINANCING, MARKETING AND STORE KEEPING

1. FINANCING

Capital Structure:

Under the Companies Act limited companies have to conform to certain standards in the preparation of financial statements and submission of returns to the Registrar of Companies. The Act requires the directors to lay before the shareholders at the annual general meeting a Profit and Loss Account along with the Balance Sheet each year. The same has to be filed with the Registrar of Joint Stock Companies immediately after the general meeting.

The balance sheet is expected to give a true and fair picture of the state of affairs of the company as at the end of the financial year. The form of balance sheet is prescribed by the Companies Act. Similarly the profit and loss account should give a true and fair view of the profit or loss position.

The study showed that the accounting year of fifteen Indian companies and four non–Indian companies was the financial year. The accounting year of seven Indian companies and one non–Indian company was the calendar year. For the analysis of financial data adjustments were made wherever necessary so as to give a common basis to the data. Table 55 presants the liabilities and assets position of the companies examined for the study.

From Table 55 it can be seen that the percentage of subscribed capital was higher in the non–Indian companies than in the Indian companies while the percentage of reserves and surpluses was higher in the Indian companies.

The percentage of fixed assets was higher in the Indian companies than in the non-Indian companies. Investment was also higher in the Indian companies.

Sources of finance:

Being limited companies the main source of finance of all companies covered by the study is the share capital of members During the course of years these companies have built up reserves and surpluses. However it has been noted that three Indian companies have sustained losses during 1974-75. A bright feature however is that four Indian companies have issued bonus shares during the five years preceding 1974-75 and seven companies are managing their finances without any loan. Of the five non-Indian companies, three are managing without any loan and in the case of another, loan forms only a very insignificant amount.

Apart from own capital other sources of finance are borrowings from commercial banks, replanting subsidy from the Rubber Board and loan from the Agricultural Refinance Corporation. The Replanting Subsidy of the Rubber Board is a major source for financing the replacement of old and uneconomic rubber trees. The Scheme was introduced in 1957. The subsidy rate which was thousand rupees per acre (Two thousand four hundred and seventy-one per hectare) in 1960 was raised in 1975 to a range of three thousand to seven thousand five hundred rupees per hectare depending upon the size of the holding or estate. The rate applicable to estates is three thousand rupees per hectare.

All estates examined for the study have availed themselves of varying amount of subsidy. The share of non-Indian estates however is higher than that of Indian estates. Since the starting of the subsidy scheme till the end of 1974, about forty million rupees have been sanctioned to the estate sector.

Method of accounting:

Double entry mercantile system is the method of accounting followed by the estates covered by the study. As

TABLE – 55

LIABILITIES AND ASSETS POSITION AT THE END OF 1974–75

(Rs. IN MILLIONS)

LIABILITIES	COMPANIES				ASSETS	COMPANIES			
	INDIAN Rs.		NON–INDIAN Rs.			INDIAN Rs.		NON–INDIAN Rs.	
Subscribed Capital	31. 2	32%	54. 5	42%	Fixed Assets	56. 0	58%	69. 3	53. 5%
Reserves and surpluses	28. 5	29%	20. 0	16%	Investments	3. 9	4%	0. 7	0. 5%
Loans	12. 6	13%	1. 3	1%	Current assets, loans and advances	37.3	38%	59. 4	46. 0%
Current liabilities and provisions	24. 9	26%	53. 6	41%					
TOTAL	97. 2	100%	129. 4	100%		97.2	100%	129.4	100%

pointed out in the Chapter dealing with Directing and Controlling, two non-Indian companies have introduced a centralised system of accounting. These companies belong to a single group. At the estate level only primary data are collected and the same are sent to the head office of the company for processing. Wages, salaries, provident fund contribution and gratuity are calculated at the head office from the data furnished by the estates. Some estate offices have recently acquired electronic calculators for accounting and analysis. Apart from these, there is no mechanisation of accounting worth mentioning.

Declaration of dividend:

Declaration of dividend on equity shares is usually considered as a measure of a company's overall performance. Hence this aspect has also been studied. Table 56 shows the position during 1974-75. The rate of dividend of Indian companies varied from three to thirty-five per cent. It may be noted from the table that only twelve Indian companies out of twenty-two could declare dividend during the year. The rate of dividend of non-Indian companies varied from twelve to twenty-three per cent.

TABLE – 56

DECLARATION OF DIVIDEND DURING 1974-75

	NUMBER OF COMPANIES DECLARING	NUMBER OF COMPANIES NOT DECLARING	TOTAL
Indian Companies	12	10	22
Non-Indian Companies	5	..	5

Relations with stock exchanges:

As we have seen except one non-Indian company all others were floated in India. It is natural therefore that these companies would maintain some relations with the

Indian Stock Exchanges. However it has been noted from the study that the shares of only fourteen Indian companies and three non–Indian companies were quoted in the Indian Stock Exchanges. The details are shown in Table 57.

TABLE – 57

RALATION WITH INDIAN STOCK EXCHANGES (END OF 1974-75)

	INDIAN COMPANIES	NON–INDIAN COMPANIES
Quoted higher than par value	7	3
Quoted lower than par value	7	..
Not quoted	6	1*
Private limited company	2	1
TOTAL	22	5

* Quoted in the United Kingdom Stock Exchanges. Understood to be quoted higher than par value.

Other information:

All non–Indian estates and twenty–one Indian estates have insured their buildings and machinery against fire. In addition to fire, fourteen non–Indian estates have insured against riot and civil commotion also. Crop insurance has yet to come into vogue in any of the estates covered by the study, although insurance against natural damage (fire, wind and flood) has been introduced in the rubber plantatation industry.

2. MARKETING

Marketing functions in rubber plantation industry:

The object of marketing is to bring the producer and consumer to meet and to effect the transfer of ownership of goods and services in exchange of money. Marketing

functions in relation to rubber are : assembling, processing, grading, packing, ware-housing, insuring, transporting and financing.

Assembling is the putting together of goods for sale. Assembling in rubber is the collection of the produce from growers spread over a vast area. Rubber is a semi-processed industrial raw material. Processing at the producers' level involves the preparation of rubber into any one or more of the following: smoked sheet or preserved latex or various forms of crepe rubber or technically specified rubber. The object of grading is to bring an understanding about the quality of the produce offered for sale. Grading of rubber is discussed separately. The purpose of packing is to facilitate transporting and storing and also to ensure external appearance and finish. Rubber is generally packed in hessian or rubber sheet itself coated with chalk powder. Polythene sheets have been introduced for packing technically specified rubber. Sometimes wooden cases are used for packing Pale Latex Crepe and Sole Crepe rubber. Concentrated latex is filled in drums.

Warehousing refers to the storing of the produce till it is sold. In the case of rubber there is a peak and slack period of production which would involve the storing of rubber for some time. Marine and fire insurances are adopted in rubber marketing. Marine insurance is taken for coastal shipping of rubber. In the transporting of rubber, road and rail take the next places after coastal shipping. The transporting adopted by the estates covered by the study has been discussed separately. The financial institutions involved in rubber marketing are indigenous, co-operative and joint stock banks. The banks provide overdrafts and loans on hypothecation of produce and allow discounting of bills of exchange.

Market agencies in rubber plantation industry:

The market agencies in rubber are country buyers, wholesalers, processors, commission agents, brokers, auctioneers and agents of manufacturers. The country buyers undertake the initial work of assembling rubber from growers or

country markets. They may be village shopkeepers itinerant traders, agents of crepe mills or dealers. The wholesalers are market intermediaries who sell goods to ultimate consumers. They generally undertake the transport, storing and preparation for consumption. In rubber, wholesalers are generally located at Kottayam and Cochin. The processors in rubber are mainly crepe millers numbering about fifty. A few technically specified rubber producing factories have also been set up recently. The above processors concentrate mainly on the produce of small rubber growers. Large estates have their own crepe mills. A few of them have established factories producing technically specified rubber also.

The commission agents buy and sell rubber for absentee principals. In rubber their role is limited. Brokers bring consumers and producers into contact. They do not own or physically handle goods. A number of brokers are operating in rubber particularly at Kottayam and Cochin. Auctioneers offer a place for buyers and sellers to meet at bidding. They may also provide facilities for storing and displaying goods. Auctioning is popular in tea and a few tea auctioning firms are handling rubber also at Cochin. A number of rubber goods manufacturers have set up their agencies at Kottayam and Cochin for purchasing rubber.

Statutory requirements for marketing of rubber:

Transactions in natural rubber are controlled by the provisions of the Rubber Act in India. As per the Act, dealers and manufacturers have to obtain licences from the Rubber Board for dealing in or acquiring rubber.[95] Producers do not require any licence for selling rubber. The Rubber Rules prescribe the procedure for obtaining licences for dealing in or acquiring rubber. Licences issued to dealers and manufacturers are valid only for one year or less, afterwards it will have to be renewed. According to the Rubber Act no person other than the owner or occupant of an estate or holding or

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95. *Rubber Act*, 1947, Sections 14 and 16.

a licensed dealer or licensed manufacturer can possess rubber. The licensed dealers, the licensed manufacturers and estates are required to submit returns to the Rubber Board in the prescribed forms.

Grading of rubber in India:

Natural rubber grading in India closely follows the international pattern of grading. In India there are twenty-two grades for sheet and crepe rubber under seven groups. In addition, there are three groups of concentrated latex also. Recently three additional grades have been prescribed for technically specified rubber. The top grade of sheet rubber is called RMA IX.

Natural rubber grading is based on visual inspection. The quality of rubber decreases with the increase in the percentage of mould, sand, bark or blemishes and also according to changes in the colour of rubber. Pale Latex Crepe is priced higher than any other grade of rubber, RMA grades take the next position. Estate Brown Crepe Rubber which is made from scrap rubber is priced lower.

Since grading of rubber is visual in nature it creates difficulties to the producer and the consumer. Down grading is a problem stemming from the visual nature of grading and it reduces the price realised by growers. It has been observed that some of the processes involved at the estate level are redundant for the manufacturers. As a result there have been developments in important rubber growing countries aimed at improving the grading The technical specification which was introduced by the International Standards Organization and developed in Malaysia based on the percentage of dirt, manganese, copper and other matter contained in rubber is intended to displace visual grading. The Indian Standards Institution has drawn up a standard for grading rubber on the above lines. This has been implemented recently. The grades of rubber produced by the estates covered by the study have been discussed in the Chapter dealing with Planning.

Price of rubber:

As pointed out in Chapter II, the price of natural rubber has been under control since 1942 more or less continuously. Since 1951 the price has been fixed on the recommendations of the Tariff Board or its successor the Tariff Commission. For this purpose the Board and the Commission had conducted studies on the cost of production of natural rubber. At some time past both minimum and maximum prices were also fixed. At present only the minimum prices are notified.

rubber

Selling the crop of rubber estates:

As pointed out in Chapter III, about fifteen to twenty per cent of crop in the estate will be scrap rubber. The scrap is the base for processing into various types of Estate Brown Crepe (EBC) rubber The general practice in most Indian estates is to sell scrap rubber to crepe millers. As pointed out in the same Chapter, all non-Indian estates and twelve Indian estates have facilities for producing EBC rubber and thirty-three Indian and eighteen non-Indian estates have facilities for producing sheet rubber.

The other products of estates are (1) rubber seeds (2) rubber wood (3) seeds of cover crops and (4) planting materials. Rubber seeds are now sold by all estates. The seeds are used for extracting oil and for planting. Rubber wood will be available when there is a replanting programme. Not all estates have a regular programme of replanting. Commercial sale of seeds of cover crop is not very widespread. However for own use some estates produce the seeds. For selling planting materials, the nursery of the estate should be recognised by the Rubber Board.

Sale of rubber:

The study has revealed that fifteen non-Indian estates were selling rubber directly to manufacturers and five estates to dealers and manufacturers. In all cases the sale of rubber was effected by the company controlling the estates. The methods of sale of rubber are shown in Table 58.

TABLE – 58

METHOD OF SALE OF RUBBER (1974–75)

	INDIAN		NON – INDIAN	
	NUMBER OF COMPANIES	NUMBER OF ESTATES	NUMBER OF COMPANIES	NUMBER OF ESTATES
To manufacturers	9	13	3	15
To dealers	7	10	..	..
To manufacturers and dealers	6	12	2	5
TOTAL	22	35	5	20

All estates are selling rubber at a price related to the market price.

Price realised for rubber:

The price realised from the sale of rubber during the five-year period ending 1974–75 has been separately examined for the Indian and non-Indian companies. The details are presented in Tables 59 and 60.

TABLE – 59

AVERAGE PRICE REALISED BY INDIAN COMPANIES

AVERAGE PRICE RANGE (Rs. per Kg.)	NUMBER OF COMPANIES IN EACH YEAR				
	1970–71	1971–72	1972–73	1973–74	1974–75
Below 4	..	3	..	..	..
4 to 4. 50	2	2	5	2	..
4 51 to 5. 00	11	10	9	8	..
5. 01 to 5. 50	5	5	5	3	..
5. 51 to 6. 00	1	..	2	4	..
6. 01 to 6. 50	..	..	..	5	1
6. 51 to 7. 00	..	..	..	..	2
7. 01 to 7. 50	..	..	..	..	6
7. 51 to 8. 00	..	..	..	..	6
8. 01 to 8. 50	..	..	..	..	4
8. 51 to 9. 00	..	..	..	..	3
TOTAL COMPANIES	19	20	21	22	22

Note : There was no production of rubber in the estates of three companies in 1970–71, two companies in 1971–72, and one company in 1972–73.

TABLE 60

AVERAGE PRICE REALISED BY NON-INDIAN COMPANIES

AVERAGE PRICE (Rs. per Kg.)	NUMBER OF COMPANIES IN EACH YEAR				
	1970–71	1971–72	1972–73	1973–74	1974–75
5.00 to 5.50	4	3	3	2	..
5.51 to 6.00	1	2	1	1	..
6.01 to 6.50	..	..	1	1	..
6.51 to 7.00	..	..	..	..	..
7.01 to 7.50	..	..	..	..	..
7.51 to 8.00	..	..	..	1	..
8.01 to 8.50	..	..	..	..	2
8.51 to 9.00	..	..	..	..	1
Above 9	..	..	..	..	2
Totsl Companies	5	5	5	5	5

It can be seen from the two tables that there was no Indian company getting an average price of more than nine rupees per kilogram in any year. It can also be seen that prices were higher in 1974–75. Prior to 1974-75 the usual range of price realised by the majority of Indian companies was between Rs.4.50 and 5.50 and non-Indian campanies was Rs.5 and 6. In 1974–75 the range was Rs.6.51 to 9 for all Indian companies except one. The range for non–Indian companies however was Rs.8.01 to over Rs.9 It can be concluded from the tables that non-Indian companies were generally getting higher unit average price for their produce.

The price which is vital to the estates is also examined from another angle. Table 61 shows the weighted average price realised by the companies.

TABLE – 61

WEIGHTED AVERAGE PRICE REALISED PER KILOGRAM OF RUBBER

YEAR	INDIAN COMPANIES (Rs.)	NON-INDIAN COMPANIES (Rs.)	HIGHER THAN INDIAN COMPANIES
1970–71	4.96	5.16	4%
1971–72	4.88	5.33	9%
1972–73	4.87	5.26	8%
1973–74	5.36	5.72	7%
1974–75	7.88	8.65	10%
WEIGHTED AVERAGE	5.58	6.07	9%

Table 61 shows that the non-Indian companies were getting higher unit price which varied from 4 to 10% over Indian companies.

Transporting:

Some Indian estates have their own lorries to transport rubber out side. But all non-Indian estates engage contractors for the purpose. The contract is renewed every year. The method adopted in Indian estates for transporting is given in Table 62.

TABLE – 62

METHOD OF TRANSPORTING ADOPTED IN INDIAN ESTATES (1974–75)

METHOD OF TRANSPORTING		ESTATES	COMPANIES
Own lorry	—	4	2
Private lorry hired as and when	—	23	14
Private lorry on two year contract	—	5	3
Private lorry on one year contract	—	1	1
Own jeep and van	—	2	2
TOTAL	—	35	22

3. STORE KEEPING

The object of store keeping in rubber estates is to ensure that proper quantity of stores is obtained at the correct time and at the lowest price, consistent with the quality desired. Other objectives are avoiding delay in purchasing and ensuring reasonable stock without locking up capital or risking smooth operation for want of stores. The functions of a store keeper are to receive, store and safeguard materials, issue correct amounts of stores, maintain stores record and give timely notice when replenishment is required.

Stores required in rubber estates:

There are two types of stores required in rubber estates. They are those used at a particular time in a year and those which are more or less in continuous use. Of the first category, the following are the important items:–

Chemical fertilisers. sulphur, copper sulphate, copper oxychloride, spray oil, materials for rainguarding, rubber kote, spouts and coconut shells. Items in continuous use are: acid, petrol, lubricant, furnace oil, diesel oil, kerosene, ammonia gas, spare parts, empty drums, buckets, tapping knives, dishes, implements, cement and iron bars. Stores generally cost about twenty to thirty per cent of estate cost of production. The major item of stores is fertiliser, followed by spraying material. These two items together would account for sixty to eighty per cent of the total stores cost.

Wide variation has been found in the stores used in the estates studied. While all non–Indian estates use fertilisers and spraying materials of varying quantities, there were seven Indian estates which had not used fertilisers for their mature area and two estates for immature area during 1974–75. Nine Indian estates had no immature area during the year. Similarly there were five Indian estates which had not sprayed their mature area and three Indian estates their immature area in 1974–75. This would considerably alter the percentage expenditure on stores in their cost of production.

It may be mentioned here that the stores accounts are maintained for the company as a whole rather than for individual estates, since the purchases are invariably effected at the head office. It may also be mentioned in this connection that the stores expenditure can increase if there is a construction programme in the estate or the estate has its own factory and if it uses own vehicles for transportation and travel. In the former case the estate would require construction materials like steel, cement and asbestos sheets and in the latter case furnace oil, diesel oil, petrol and lubricants. Similarly the type of processing also will necessitate additional stores items. If concentrated latex is produced in the estate, it may require ammonia gas and empty drums. Most of the non-Indian estates own factories and vehicles and have a regular programme of construction. Some of them produce concentrated latex also. These estates are also regular in adopting plant protection and manuring. The percentage expenditure can also be higher if the estate is using yield stimulants and rainguards. Most of the non-Indian estates are using these items regularly. Hence the percentage expenditure on stores is higher in the non-Indian than in the Indian estates. In the case of non-Indian estates it varied from twenty to thirty-five per cent of the estate cost of production, while it was ten to twenty-five per cent in the Indian estates in 1974-75.

Duration of holding stores:

The duration of stocking before use or stocking the quantity equal to a particular period's consumption has been studied for important items of stores. These are presented in Table 63 and 64.

Fertilisers are used generally twice a year while spraying materials are required once in a year. Formic acid on the other hand is required continuously. The above tables show that fertilisers and spraying materials are received in the estate a few days or weeks in advance of use while Formic acid is kept in store equal to the average consumption of one

TABLE — 63

LENGTH OF STORING IMPORTANT ITEMS (INDIAN ESTATES) (1974 – 75)

STORING IN ADVANCE OF USE / DURATION OF STORING		FERTILISERS (Storing in advance of use)	SPRAYING MATERIALS (storing in advance of use)	FORMIC ACID (quantity equal to consumption)	RUBBER (quantity equal to production)
About a year	—	..	..	3	..
About six months	—	..	..	5	..
About three months	—	..	..	10	..
About two months	—	..	..	3	4
About one and half month	—	..	..	..	3
About a month	—	..	10	11	12
About two weeks	—	12	9	..	10
About a week	—	7	6	..	3
Less than a week	—	9	5	..	3
TOTAL	—	28*	30$	32@	35

* Seven estates were not using fertilisers for mature area in 1974–75.

$ Five estates had not sprayed the mature area in 1974–75. Of these two estates are in abnormal leaf fall disease free area.

@ Three estates produce concentrated latex mainly. Hence they usually do not require Formic acid.

TABLE – 64

LENGTH OF STORING IMPORTANT ITEMS (NON-INDIAN ESTATES) 1974-75

STORING IN ADVANCE OF USE / DURATION OF STORING	FERTILISERS (storing in advance of use)	SPRAYING MATERIALS (storing in advance of use)	FORMIC ACID (quantity equal to consumption)	RUBBER (quantity equal to production)
About a year	— ..	..	..	..
About six months	— ..	..	3	..
About three months	— ..	..	6	..
About two months	— ..	1	3	..
About one and a half moth	— ..	..	..	..
About one month	— ..	6	3	..
About two weeks	— ..	7	2	5
About a week	— 2	5	..	15
Less than a week	— 18	..	..	..
TOTAL	— 20	19*	17@	20

* One estate is located in an area where there is no abnormal leaf fall disease.

@ Three estates are producing mainly concentrated latex. Hence they do not usually require Formic acid.

year or six months or less as the case may be. In the case of rubber the tables show that the production of a certain period is accumulated in the estate before despatch. The above tables show that in the majority of non-Indian estates fertilisers are not stocked for more than a week while a number of Indian estates store fertilisers for two weeks before use. In the case of rubber also the majority of non-Indian estates are in a position to despatch a week's crop while it is not the case with Indian estates. In this connection it may be mentioned that usually the estate sends a lorry load of rubber to save transport charges. In the majority of non-Indian estates this is possible within a week because of their size while the majority of Indian estates are small and hence may require more time to obtain a lorry load of rubber. It may be mentioned in this connection that some time ago Formic acid was in short supply and therefore the estates started keeping more Formic acid in stock as a precaution.

Sources of purchase of materials:

From the point of view of stores cost the important items are fertilisers and spraying materials. Therefore the sources of purchase of these items have also been studied. The non-Indian companies purchase these items directly from the producers Sister concerns of some non-Indian companies are also distributors of fertilisers and spraying materials. Sister concerns of some Indian companies are also agents or distributors for these items. The sources of purchase of Indian estates are given in Table 65.

TABLE - 65

SOURCES OF PURCHASE OF FERTILISERS AND SPRAYING MATERIALS

(INDIAN ESTATES) (1974-75)

SOURCES	FERTILISERS	SPRAYING MATERIALS
Producer	— 22	14
Agent	— 10	21

(Contd.)

Co-operative society	—	1	..
Producer & Agent	—	2	..
TOTAL ESTATES	—	35	35

4. EVALUATION OF FINANCE, MARKETING AND STORE KEEPING

Finance:

We have seen in the Chapter dealing with Directing and Controlling that a number of Indian estates have not worked out the cost of production and some of them have not prepared any budget also. When these are viewed in the background of the losses sustained by a number of Indian companies, the extent of their deficiency would be clearly found. The fact that a number of Indian companies could not declare dividend reveals that their position is far from satisfactory. The other aspects of financing, i. e. budget, financial analysis and cost control have been discussed in Chapter III and VI.

Marketing:

The price realised by the Indian companies from the sale of rubber is lower. Coupled with the lower yield, this has reduced their gross income. Therefore most Indian companies have to adopt a better marketing strategy.

The practice noticed in many Indian estates is to sell scrap rubber to private millers. Since there is considerable price difference between scrap rubber and EBC rubber produced from scrap, it is worth examining, after taking into account the individual size of estates, whether producing EBC rubber in the estate or getting the scrap converted into EBC grades in outside mills will be of advantage. Since the modern trend is to replace visual grading, the possibility of converting the entire crop of rubber into technically specified rubber either independently or jointly with other estates could also be examined. The general practice in some Indian estates is to sell rubber as 'lot' consisting of diffe-

rent grades. Since there is some difference in the price of various grades of rubber an effort to grade rubber properly may be rewarding.

Store keeping:

Fertiliser is the most important item that has to be purchased by estates. The present practice in many estates is to purchase fertiliser mixtures. However there will be considerable saving if straight fertilisers are purchased and mixed in the requisite proportion in the estate. The advantages are the prevention of adulteration and avoiding the payment for and transporting of fillers. It is also worth exploring in this connection whether payment for fertilisers could be made after examining the content of the plant nutrient in the fertilisers. Similar practice could be adopted in the purchase of or payment for spraying materials also. The study also reveals that there is some scope for reducing the storing period of important items.

CHAPTER – IX

MANAGEMENT AND PRODUCTIVITY IN RUBBER ESTATES

1. INTRODUCTION

The productivity of plantation crops has been generally higher than many other agricultural crops in India. As we have seen in Chapter I, the productivity of rubber has been higher since 1963–64. For the overall progress of the country, continuous increase in productivity is required from every industry. Increase in productivity presupposes the best use of men, materials and money. The estate manager has therefore to examine his role critically with a view to improving the use of productive assets at his control.

As mentioned in Chapter I, the plantation manager has to face certain special problems in addition to the common problems of management. The special nature of plantation as an agro–based industry is both a source of strength and weakness. The strength lies in the fact that it is a well organised industry. The susceptibility to the vagaries of nature like any other form of agriculture is its weakness. These special features impose added responsibility on the plantation manager. He has to be alert all the time to counter the ill–effects of natural calamities like draught, flood, frost and diseases. In this context modern management techniques and practices have an important role to play in increasing the productivity of plantations.

In the recent past considerable increase in productivity has been achieved in plantations. This has been due to the introduction of improved varieties of planting materials, use of fertilisers, fungicides, pesticides and weedicides and by better organization of production and processing. This increase has helped the plantation industry to bear part of the increased cost.

mportance of records in improving productivity:

Full and informative records are necessary to guide the management to make a steady progress. Agriculturists in India are generally hesitant in keeping proper records for management. The plantation managers have a responsibility to give a leaderahip in this regard. Questions like the limit in the use of fertiliser and usefulness of insecticides, weedicides and pesticides in increasing yield are vital to improving productivity. To answer such questions, proper records are necessary. Detailed records also assist the management in developing correct planning.

The records will show whether production is going up or down and will enable them to take corrective action. The records can also indicate the trend in the prices obtained for different grades. This will enable the management to switch on to other grades. These records have to be analysed and interpreted regularly. The records can be designed to serve individual needs of estates and in a manner enabling the manager to make a regular review of the operations with a view to taking corrective action.

Role of labour in improving productivity:

The social distance between management and labour is generally greater in plantations than in most other organised industries in India. However for increasing productivity, the management will have to develop a labour force different from the one now employed and also associate workers in the decision-making process, more and more. As labour costs go up, the use of smaller labour force will become necessary for the viability of many estates. In fact in a number of rubber estates the total number of workers employed a decade ago was somewhat higher than that of today. The reduction had been achieved mainly by using high yielding planting materials, increasing the number of trees to be tapped by one person, assisting the collection of latex by providing transport and adopting aerial spraying instead of hand spraying.

It is sometimes argued that labour is indifferent to higher productivity. Apparently this may appear sound. But an estate, the productivity of which is not comparable with the industry's or that of a viable unit, will in the long run throw workers out of employment. It is true that productivity is the main responsibility of management, but workers have also an important role to play. Technological innovations, re-organization of facilities and introduction of qualitative improvements in the skill of workers are some of the steps necessary for the purpose. A rubber planter who replants low yielding materials with high yielding ones is introducing technological innovation which increases the output per worker also. Re-organising tasks or making available equipment and introducing training will improve their productivity.

So far managements have not done much to educate the workers about the benefits accruing from increased productivity. The workers may be apprehensive of the increased productivity which only reduces employment. If the workers can be convinced that productivity will increase their welfare, security and earnings, their co-operation can be enlisted. For the purpose the management will have to take them into confidence and take necessary steps to create such confidence.

2. FINDINGS OF THE STUDY

Ptoductivity is the ratio of output to input in production. Output is the goods and services produced and input is the manhour, materials, machine and money required for producing the same. There are a number of methods for measuring productivity. The measurements can be in relation to labour, materials consumption, capital investment and machine hours used or space utilised. Labour productivity is usually a general index of overall productivity. Utilisation of productive assets like, men, materials and money to the full extent is the straight method of increasing productivity.

Productivity per worker:

As mentioned in Chapter I plantations are characterised by the employment of large scale labour. Therefore productivity measurement in relation to plantations should start with the measurement of production per worker. It is true that there are variations in the productivity of plantations depending upon the vagaries of nature, fertility of the soil, distribution of rainfall or fluctuations in the climate. However, since the comparison is made between groups of estates situated in more or less similar areas, labour productivity may not be unrealistic.

From the study it has been found that the production per worker was 965 kg. in the non-Indian estates and 876 kg. in the Indian estates in 1974-75. It may also be of interest to note the employment of workers per hectare. The figures were one worker for 1.61 hectares and one worker for 1.28 hectares respectively for Indian and non-Indian estates in the same year. This would show that less workers were employed per hectare in the Indian estates.

Yield per hectare:

Tables 66 and 67 show the yield level of estates belonging to Indian and non-Indian companies selected for the study.

TABLE - 66

YIELD PER HECTARE OF ESTATES UNDER INDIAN COMPANIES

(KG. PER HECTARE)

YIELD RANGE	NUMBER OF COMPANIES				
	1970-71	1971-72	1972-73	1973-74	1974-75
400 and below	4	4	5	4	5
401 to 500	..	1	..	2	1
501 to 600	4	1	1	..	1

(Contd.)

601 to 700	2	4	2	2	4
701 to 800	2	..	3	2	3
801 to 900	2	5	3	3	3
901 to 1000	2	1	4	4	1
Above 1000	3	4	3	5	4
TOTAL	19@	20$	21*	22	22

@ No production in the estates belonging to three companies.
$ No production in the estates belonging to two companies.
* No production in the estates belonging to one company.

Table 66 would show that fifty–three per cent of Indian companies was obtaining seven hundred kilograms or less yield per hectare in 1970–71, fifty per cent in 1971–72, thirty–eight per cent in 1972–73 and thirty– eight per cent in 1973–74 and fifty per cent in 1974–75. The picture of non–Indian companies was different. All estates under the companies were producing more than seven hundred kilograms during all the five years. In fact there was only one company producing between seven hundred and one to eight hundred kilograms in one of the years.

TABLE – 67

YIELD PER HECTARE OF ESTATES UNDER NON–INDIAN COMPANIES

(KG. PER HECTARE)

YIELD RANGE	NUMBER OF COMPANIES				
	1970–71	1971–72	1972–73	1973–74	1974–75
701 to 800	..	..	..	..	1
801 to 900	..	1	..	2	..
901 to 1000	2	2	3	1	1
1001 to 1100	2	2	1	1	1
Above 1100	1	..	1	1	2
TOTAL	5	5	5	5	5

Yield is also examined from another angle. Table 68 presents the weighted average yield per hectare of estates belonging to Indian and non-Indian companies.

Table 68 shows that uniformly the yield of estates belonging to Indian companies was lower in all the years compared to the yield of estates under the non-Indian companies. In terms of percentage, the yield of non-indian companies was higher by twelve to twenty-five per cent.

Income from a unit area:

As pointed out in Chapter VIII, the price realised by the non-Indian companies was found to be higher than that of Indian companies in the five years compared for the study. As can be seen from Table 68, the weighted average yield of the Indian companies was also found to be lower than that of non-Indian companies. This places the Indian companies in double disadvantages. It may be of interest to find out the gross average income from a unit area in both Indian and non-Indian companies. This is presented in Table 69.

Table 69 shows the double disadvantages under which the Indian companies are operating because of the lower yield and lower price realised. This has an unfavourable multiplier effect on the gross income earned by the companies. The table would show that the gross income earned by the non-Indian companies varied from nineteen to thirty-six per cent over that of Indian companies. The five year weighted average however was twenty-nine per cent.

Cost of production:

Profit is usually the best and easiest yardstick for measuring efficiency. One of the areas the plantation managers will have to watch closely is the profitability of capital. Increase in profit will attract fresh capital into plantations for innovation and growth. Keeping up the profitability of capital or lessening losses and utilising existing capital to the full extent should be one of the main objectives to be pursued by management.

TABLE – 68

WEIGHTED AVERAGE YIELD PER HECTARE PER YEAR (IN KG.)

YEAR	INDIAN COMPANIES		NON–INDIAN COMPANIES		HIGHER OVER INDIAN COMPANIES
	NUMBER OF COMPANIES	YIELD (KG.)	NUMBER OF COMPANIES	YIELD (KG.)	
1970–71	19@	797	5	997	25%
1971–72	20$	833	5	958	15%
1972–73	21*	817	5	961	18%
1973–74	22	899	5	1003	12%
1974–75	22	784	5	970	24%
WEIGHTED AVERAGE OF FIVE YEARS		826		978	18%

@ No yielding area in the estates belonging to three companies.
$ No yielding area in the estates belonging to two companies.
* No yielding area in the estates belonging to one company.

TABLE - 69

GROSS AVERAGE INCOME FROM A UNIT AREA OF ONE HECTARE

YEAR	INDIAN COMPANIES			NON-INDIAN COMPANIES			DIFFERENCE OVER INDIAN COMPANIES
	Weighted average		Gross income	Weighted average		Gross income	
	Price (Rs. Kg.)	Yield (hectare/Kg.)	(Rs.) (2 x 3)	Price (Rs. Kg.)	Yield (hectare/kg.)	(Rs.) 5x6)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1970-71	4. 96	797	3953	5 16	997	5145	30%
1971-72	4. 88	833	4065	5.33	958	5106	26%
1972-73	4. 87	817	3979	5.26	961	5055	27%
1973-74	5. 36	899	4819	5.72	1003	5737	19%
1974-75	7. 88	784	6178	8.65	970	8390	36%
WEIGHTED AVERAGE FOR FIVE YEARS	5. 85	826	4609	6.07	978	5936	29%

TABLE – 70

ESTATE COST OF PRODUCTION AS PERCENTAGE OF PRICE REALISED (INDIAN COMPANIES)

RANGE IN PERCENTAGE	1970–71	1971–72	1972–73	1973–74	1974–75
Less than 50	— 2	1	..	..	3
50 to 60	— 2	2	3	3	3
61 to 70	— 5	4	4	6	3
71 to 80	— 3	4	6	6	5
81 to 90	— 2	5	1	1	6
91 to 100	— 3	1	3	5	1
Above 100	— 2	3	4	1	1
TOTAL	19@	20$	21•	22	22

@ No production in the estates belonging to three companies.
$ No production in the estates belonging to rwo companies.
• No production in the estates belonging to one company.

TABLE – 71

ESTATE COST OF PRODUCTION AS PERCENTAGE OF PRICE REALISED (NON-INDIAN COMPANIES)

RANGE IN PERCENTAGE	1970–71	1971–72	1972–73	1973–74	1974–75
Less than 50 —	1	1	..	1	1
50 to 60 —	..	..	1	..	..
61 to 70 —	1	1	1	1	2
71 to 80 —	2	2	2	2	1
TOTAL	4	4	4	4	4

Note:– The remaining company is a mixed one producing other crops also. Hence it has not been possible to find out the cost of production of rubber only. The company however is maintaining a very high yield and pays dividend every year. The estate cost can be assumed to be in the range of seventy-one to eighty per cent.

A measure of profitability is the cost of production. The cost of production is compared to the price realised and represented as a percentage. This is shown in Tables 70 and 71.

It can be seen from Tables 70 and 71 that all non-Indian companies have been able to achieve the estate cost of production at eighty per cent or below of the price realised, while only sixty-three per cent of Indian companies was able to realise similar position in 1970-71. The number of such companies was fifty-five per cent in 1971-72, sixty-two per cent in 1972-73, sixty-eight per cent in 1973-74 and sixty-four per cent in 1974-75. In other words only two thirds of Indian companies were able to achieve that position. The cost of production of the remaining one third was generally over eighty per cent of the price realised. This shows that the cost of production of these companies was very high.

Productivity and cultivation practices:

The above analysis would clearly show that non-Indian companies are better placed in regard to productivity represented by cost of production or profit. It can also be noted that this superiority of non-Indian companies was not a chance occurrence of one or two years. They were consistently showing higher performance in all the five years compared for the study. Naturally a question might be asked as to the reasons for their better performance. As we have seen in the previous chapters, the overall performance of non-Indian estates was better in relation to various management functions. Apart from these facts, there are certain other points in their favour.

Rubber is a perennial crop which will have to be nourished throughout its economic life. The crop is affected by a fungal disease occurring mainly in Kerala and Karnataka States. The severity of the disease is less in Tamil Nadu. It is now a common practice to spray the leaves of the rubber tree with fungicides to prevent or minimise the severity of the disease. The rubber tree also requires

plant nutrients in appropriate doses. This is applied generally twice a year, during pre-monsoon and post-monsoon periods. However there are estates applying manures once a year also. In any case application of manures is an essential operation for the proper growth of the tree. As mentioned in Chapter VIII manures and fungicides are the main items of stores' cost in an estate. After wages these two account for the largest amount of estate expenditure. The extent of application of these items will reveal some of the reasons for the short fall in the yields in the estates studied. The comparison is made in respect of mature area (yielding) and immature area.

Table 72 shows the extent of manuring of mature area in Indian and non-Indian estates. The table would show that there was no non-Indian estate which had not manured during 1974-75. It is true that a few estates are manuring part of their area. This is due to the fact that some areas in an estate may be very old or may be undergoing slaughter tapping and therefore may not require manuring.

Table 73 shows the number of estates manuring immature area. It can be seen from Table 73 that two Indian estates had not manured immature area in 1974-75.

The combined position of manuring in the Indian and non-Indian estates is shown in Table 74. The table shows that sixty-four per cent of total area in the Indian estates and eighty-seven per cent of total area In the non-Indian estates have been manured during the year. This would show that there is considerable difference in respect of manuring practices in the Indian and non-Indian estates.

Spraying:

An equally important practice is spraying. Table 75 shows the position in respect of mature area under Indian and non-Indian estates. Here also there were five Indian estates which had not sprayed their mature area in 1974-75. Out of these, one estate is located in an area where abnormal leaf fall disease is not very severe.

TABLE – 72

EXTENT OF MANURING MATURE AREA (IN HECTARES – 1974–75)

	INDIAN ESTATES				NON–INDIAN ESTATES			
	No. of estates	Total area	Area manured	As percentage to total area	No. of estates	Total area	Area manured	As percentage to total area
Fully manured –	21	2805	2805	100%	12	5414	5414	100%
Partly manured –	7	1849	389	21%	8	4430	2924	66%
No manuring –	7	1260	..	..	..	..	..	..
TOTAL –	35	5914	3194	54%	20	9844	8338	85%

TABLE – 73

EXTENT OF MANURING IMMATURE AREA

	INDIAN ESTATES				NON INDIAN ESTATES			
	No. of estates	Total area	Area manured	As percentage to total area	No. of estates	Total area	Area manured	As percentage to total area
Fully manured	23	1946	1946	100%	16	2056	2056	100%
Partly manured	1	211	80	38%	4	760	608	80%
No manuring	2	131	..	..	..	..	..	..
TOTAL	26@	2288	2026	89%	20	2816	2664	95%

@ In nine estates there were no immature areas in 1974-75.

TABLE - 74

EXTENT OF AREA MANURED (IN HECTARES - 1974-75)

	INDIAN ESTATES			NON-INDIAN ESTATES		
	Total rubber area	Area manured (partly or fully)	As percentage to total area	Total rubber area	Area manured (partly or fully)	As percentage to total area
Mature area	5914	3194	54%	9844	8338	85%
Immature area	2288	2026	89%	2816	2664	95%
TOTAL	8202	5220	64%	12660	11002	87%

TABLE – 75

EXTENT OF SPRAYING MATURE AREA (IN HECTARES – 1974–75)

	INDIAN ESTATES				NON–INDIAN ESTATES			
	No. of estates	Total area	Area manured	As percentage to total area	No. of estates	Total area	Area manured	As percentage to total area
Fully sprayed –	27	4386	4386	100%	14	5956	5956	100%
Partly sprayed –	3	1219	795	65%	6	3888	3305	85%
No spraying –	5	309	..	..	..	..	..	..
TOTAL –	35	5914	5181	88%	20	9844	9261	94%

TABLE – 76

EXTENT OF SPRAYING IMMATURE AREA (IN HECTAREA – 1974–75)

	INDIAN ESTATES				NON INDIAN ESTATES			
	No. of estates	Total area	Area sprayed	As percentage to total area	No. of estates	Total area	Area sprayed	As percentage to total area
Fully sprayed	21	1847	1847	100%	16	1833	1833	100%
Partly sprayed	2	310	178	57%	4	983	768	78%
No spraying	3	131	..	..	..	..	..	..
TOTAL	26@	2288	2025	89%	20	2816	2601	92%

@ In nine estates there were no immature areas in 1974-75.

TABLE - 77

EXTENT OF AREA SPRAYED (IN HECTARES - 1974-75)

	INDIAN ESTATES			NON-INDIAN ESTATES		
	Total area	Area sprayed (partly or fully)	As percentage to total	Total area	Area sprayed (partly or fully)	As percentage to total
Mature area	5914	5181	88%	9844	9261	94%
Immature area	2288	2025	89%	2816	2601	92%
TOTAL	8202	7206	88%	12660	11862	94%

Table 76 shows the details regarding spraying in immature area. Here also there were three Indian estates which had not sprayed the area. One of the estates however is located in a belt where the leaf fall disease is not severe.

Area sprayed is examined in relation to both mature and immature area and presented in Table 77. Table 77 shows the combined position of spraying in Indian and non-Indian estates. It can be seen that ninety-four per cent of the area under rubber had been sprayed in the non-Indian estates as against eighty-eight per cent in Indian.

Other reasons:

Certain other reasons can also be noted for the low productivity of Indian estates. As mentioned in Chapter IV eight per cent of mature area is still planted with unselected materials in the Indian estates as against four per cent in the non-Indian estates. The productivity of this material is considerably lower than that of either clonal or budded planting materials. This is also a reason for the lower yield of Indian estates compared with non-Indian estates.

General observations:

Another reason for the lower productivity of Indian estates is the lack of professionalism in management. It is not the colour of the skin that has led to the higher productivity of non-Indian estates. In fact a large number of managers in the non-Indian estates are Indians. The better management of these estates vis-a-vis Indian estates has been due to the better competence of managers which in turn has been achieved by better selection, training and development. The managements of these estates are quick in assimilating modern techniques of rubber cultivation and processing and management.

It has been noted during the study that some Indian companies are owned or controlled by a family or group of families. As a result sometimes the managing director of the

company and the managers of the estates are drawn from among the members of the same family. There is no harm in their being relatives if they are both trained and efficient. But this is not always the case. It appears that there is a linking of ownership and management in some Indian estates. The managements of these estates appear to assume that the owners of capital are best suited for managing the estates Delinking of ownership and management can be one of the steps helpful for increasing the productivity of Indian estates.

Lack of proper training is also a factor affecting the quality of management, particularly of Indian estates. In the non-Indian estates also better training would bring much better results. This aspect has been already dealt with in detail in Chapter V. It may be reiterated here that professionalisation of management with short and long term training and development will go a long way in increasing productivity.

3. SUGGESTIONS FOR IMPROVING PRODUCTIVITY

Objectives:

Developing realistic and appropriate objectives is the most important step in planning. The plantation managers should give more importance to identify objectives such as higher margin of profit, higher productivity of land and labour and faster turnover of assets. Development of objectives should lead to setting detailed targets to be achieved in a specific time.

Planning:

Site planning, layout and materials handling can be employed in plantations, particularly at the time of opening a new estate. The sites of workers' residences, factory, fertiliser and implement stores can be decided in advance for minimising the distance to be travelled for work, for

transporting materials and ensuring free flow of goods. The technique of travel charts can be applied after analysing the relative volume of crop flow between fields and factory.

Labour productivity:

The problem of improving productivity of labour has been a regular theme of discussion during the fixation of wages. At best, hard work can bring only marginal increase in productivity. Increase in output per worker is more closely related to the facilities and tools provided to him than to the effort he can muster.

About two thirds of total man-days are utilised for collecting and processing crop. The incentive payments introduced with a view to improving the performance of tappers appear to have failed in motivating them to improve productivity. The incentives have been taken to be a part of the wages now. Hence a different form of wage incentive will have to be devised to eathuse them.

A number of work study techniques can be employed in plantations such as (1) those which increase the flow of work and thereby increase the utilisation of capital (2) those which optimise the use of labour and equipment and (3) those which improve the efficiency of workers and reduce their fatigue. Work study, it may be mentioned, aims at evaluating the effectivenes of work systems with a view to ensuring the best possible utilisation of all resources. Work study, performance comparison and other techniques of management science offer several possibilities for improvement.

Assessment of work loads of important categories of workers by direct observation enables the management to improve productivity. This can be attempted even by a manager who is not trained in the science of management.

Multiple activity charts and balancing charts may be of use in determining the number of workers to form an integrated team to obtain the best results for a givenn task or job. Where inter-related or interdependent activities are

to be performed, the application of PERT / CPM / Net Work Analysis will be of use in phasing and scheduling operations.

Inventory control:

High inventories result in high costs of carrying them, high wastages, high deterioration and high administrative costs. The standardisation and substitution of materials through Value Analysis may be useful in reducing cost.

Materials handling:

In Western countries significant increases in the productivity of agriculture have been achieved through extensive improvement in materials handling methods like the use of truck or tractor–trailer. In the plantations, with some exceptions here and there, materials handling equipment continue to be the truck and the hand cart. Since materials handling equipments like presses, trolley on rails and tractor–trailer are available indigenously, their wide spread use may be possible. However, the economics of different types of equipment will have to be examined and an appropriate decision should be made, taking into consideration the size of the estate and its present and future needs.

From the above discussion it can be concluded that there is considerable scope for improving productivity of estates, particularly those belonging to Indian companies by applying some of the suggestions given above.

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TABLE SHOWING THE REGISTERED
(AREA IN HEC

Size-Group	1955-56	1960-61
SMALL HOLDINGS :	18289	38340
2 hectares and below	(21.81%)	(29.51%)
Above 2 hectares and upto and including 4 hectares.	5699 (6.79%)	13981 (10.76%)
Above 4 hectares and upto and including 20 hectares.	12300 (14.67%)	24054 (18.52%)
Total small holdings	36288 (43 27%)	76375 (58.79%)
ESTATES :		
Above 20 hectares and upto and including 40 hectares.	6781 (8.09%)	7590 (5.84%)
Above 40 hectares and upto and including 200 hectares	15047 (17.94%)	17812 (13.71%)
Above 200 hectares and upto and including 400 hectares.	9578 (11.42%)	8082 (6.22%)
Above 400 hectares and upto and including 600 hectares.	7513 (8.96%)	8768 (6.75%)
Above 600 hectares and upto and including 800 hectares	2762 (3.29%)	3437 (2.65%)
Above 800 hectares.	5898 (7.03%)	7841 (6·04%)
Total Estates.	47579 (56.73%)	53530 (41.21%)
Grand Total :	83867 (100%)	129905 (100%)

(Source : Indian Rubber Statistics, Vol. 14, 1

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ANNEXURE — I

AREA IN EACH SIZE—GROUP

ARES)

1965-66	1970-71	1974-75	Increase / Decrease in 1974-75 over 1955-56.
51433	68470	79386	334.06%
(31.22%)	(33.71%)	(35.88%)	
18251	25853	29433	416.46%
(11.08%)	(12.73%)	(13.30%)	
32181	42102	46615	(278.98%)
(19.54%)	(20.73%)	(21.07%)	
101865	136425	155434	(328.33%)
(61.84%)	(67.17%)	(70.25%)	
9556	8771	8537	25.90%
(5.80%)	(4.32%)	(3.86%)	
20476	21318	19747	31.24%
(12.43%)	(10.49%)	(8.92%)	
8551	8219	6962	-27.3 %
(5.19%)	(4.05%)	(3.15%)	
9400	9966	8671	15.41%
(5.71%)	(4.91%)	(3.92%)	
2696	4036	5439	96.92%
(1.64%)	(1.99%)	(2.46%)	
12169	14363	16475	179.33%
(7.39%)	(7.07%)	(7.44%)	
62848	66673	65831	38.36%
(38. 6%)	(32.83%)	(29.75%)	
164713	203098	221265	163.83%
(100%)	(100%)	(100%)	

75. Percentage worked out by the author)

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" 2 December 1905.
" 13 February 1907.
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" 9 April 1910.
" 27 April 1910.
" 11 May 1910.
" 25 May 1910.
" 21 December 1910.
" 4 September 1912.
" 4 January 1913.
" 26 July 1916.

TABLE SHOWING THE NUMB
AND TI

Size-Groups	1955-56	19
SMALL HOLDINGS :		
2 hectares and below	23364 (85.79%)	(8
Above 2 hectares and upto and including 4 hectares.	1948 (7.15%)	
Above 4 hectares and upto and including 20 hectares.	1475 (5.42%)	
Total small holdings	26787 (98.36%)	(
ESTATES :		
Above 20 hectares and upto and including 40 hectares.	209 (0.77%)	(
Above 40 hectares and upto and including 200 hectares.	179 (0.66%)	(
Above 200 hectares and upto and including 400 hectares.	33 (0.12%)	
Above 400 hectares and upto and including 600 hectares.	15 (0.06%)	
Above 600 hectares and upto and including 800 hectares	4 (0.01%)	
Above 800 hectares.	6 (0.02%)	(
Total Estates.	446 (1.64%)	(-
Grand Total :	27233 (100%)	

(Source : Indian Rubber Statistics, Vo

ANNEXURE — II

ER OF UNITS IN EACH SIZE—GROUP
HEIR PERCENTAGES

960–61	1965–66	1970–71	1974–75	Increase / Decrease in 1974–75 over 1955–56.
49636	65477	95414	110340	372.27%
5.99%)	(86.00%)	(85.51%)	(85.92%)	
4660	6175	9922	11220	475.98%
(8.07%)	(8.11%)	(8.89%)	(8.74%)	
2878	3852	5593	6255	324.07%
(4.99%)	(5.06%)	(5.01%)	(4.87%)	
57174	75504	110929	127815	
99.05%)	(99.17%)	(99.41%)	(99.53%)	377.15%
271	325	309	299	43.06%
0.47%)	(0.43%)	(0.28%)	(0.23%)	
216	248	273	248	38.55%
0.38%)	(0.33%)	(0.24%)	(0.19%)	
29	30	29	26	–21.21%
(0.05%)	(0.04%)	(0.03%)	(0.02%)	
18	19	20	18	20.00%
(0.03%)	(0.02%)	(0.02%)	(0.01%)	
5	4	6	8	100.00%
(0.01%)	(ng)	(0 01%)	(0.01%)	
8	10	12	14	133.33%
(0·01%)	(0·01%)	(0.01%)	(0.01%)	
547	636	649	613	37.44%
0.95%)	(0.83%)	(0.59%)	(0.47%)	
57721	76140	111578	128428	371.59%
(100%)	(100%)	(100%)	(100%)	

14, 1975. Percentage worked out by the author)

ANNEXURE—III

Annual Percentage Increase Over the Previous Year in Respect of Area and Number of Units in Small Holding and Estate Sector

	Small Holdings		Estates		Total	
	Units %	Area %	Units %	Area %	Units %	Area %
1955—56	89.05	51.51	-2.62	0.09	86.18	17.32
1956—57	31.28	27.46	0.67	2.12	30.78	13.08
1957—58	23.75	22.87	4.90	1.26	23.51	11.89
1958—59	14.41	15.61	5.52	2.17	14.31	9.38
1959—60	9.86	10.16	3.22	1.92	9.80	6.59
1960—61	4.53	5.52	6.63	4.49	4.55	5.09
1961—62	9.96	11.15	6.03	4.60	9.92	8.45
1962—63	5.56	5.23	3.45	1.48	5.54	3.74
1993—64	5.71	6.11	3.00	2.36	5 68	4.65
1964—65	1.53	1.38	1.29	1.84	1.53	1.56
1965—66	6.01	6.00	1.60	6.11	5.97	6.05
1966—67	8.19	6.03	1.73	0.65	8 14	3.98
1967—68	13.52	8.30	1.08	2.17	13.42	6.03
1968—69	7.25	4.63	-2.14	0.79	7.18	3.26
1969—70	7.42	6.76	1.09	1.14	7.38	4.90
1970—71	3.84	4.24	0.31	0.93	3.83	3.25
1971—72	3.18	3.60	0.15	1.15	3.17	2.80
1972—73	4.52	3.87	-2.77	-1.68	4.48	2.07
1973—74	3.98	3.17	-0.79	-0.33	3.96	2.08
1974—75	2.75	2.63	-2.23	-0.38	2.72	1.71
Average	12.82	10.41	1.51	1.66	12.60	5.89

Source : *Indian Rubber Statistics*, Vol. 14. 1975
(percentage worked out by the author)

ANNEXURE — IV

A BUDGET PROFORMA

(Estimate for the year - - - -)

SCHEDULE—I

.....RD YEAR TAPPING ..... HECTARES-DIVISION I

Item No.	Head of expenditure	Particulars of expenditure & basis of estimate	Estimated amount	Cost per hectare
			Rs.	Rs.
1.	Weeding :			
	Wages.	... women workers per hectare per round at Rs. ..... per worker per day ..... rounds a year		
2.	Manuring :			
	(a) Wages.	... men workers per hectare at Rs. ..... per worker per day. rounds a year.		
	(b) Cost of fertiliser	NPK Mixture at — — kg. per hectare. Rs. ..... per tonne.		
3.	Micron spraying :			
	(a) Wages.	... workers per hectare Rs. ..... per worker per day.		
	(b) Cost of chemicals.	... litre of fungicides per hectare at Rs. ... per litre and ... litre of spray oil per hectare at Rs. ... per litre.		
4.	Inspection path :	Wages at Rs. ..... per hectare.		
5.	Fire protection :	Wages at Rs. ..... per hectare		
6.	Panel treatment :	a) Stores ..... b) Wages		

Item No	Head of expenditure	Particulars of expenditure & basis of estimate	Estimated amount.	Cost per hectare
			Rs.	Ps.
7.	Tapping labour:	Wages for ... ... tappers at Rs .. ..per annum.		
8.	Tapping implements:	at Rs... ... ...per tapper for .. ..tappers		
9.	Cup, hanger, spout, etc.	Lumpsum provision Rs		
10.	Other Items.	not provided for Rs...		
		Total Schedule I		

SCHEDULE-II

—TH YFAR IMMATURE MAINTENANCE - ——HECTARES

DIVISION-II

1.	Pruning & thinning out.	Wages: — men workers at Rs.——— per worker per day.
2.	Weeding & Mulching.	Wages: —women workers per Round. ..... Round Rs.——— per worker per day.
3.	Manuring	a) Wages: — men workers per hectare at Rs.——— per worker per day .....a year.
		b) Cost of fertiliser: NPK. Mg. Mixture, at ——kg. per hectare. Rs.—— per tonne.

SCHEDULE-IV

GENERAL EXPENSES

Item No.	Head of expenditure	Particulars of expenditure	Estimated amount	Cost per hectare
A.	Salaries			
1.		Manager at Rs ..... per month for 12 months		
2.		Assistant Manager at Rs ..... per month for 12 months.		
3.		Office Staff at Rs ..... per month for 12 months.		
4.		Other staff at Rs..... ... per month for 12 months.		
B.	Other Charges			
1.	Printing & Stationery			
2.	Books & Periodicals			
3.	Postage			
4.	Taxes.			
5.	Others, if any.			
C.	Welfare Benefits			
1.	Leave with wages			
2.	Holiday pay			
3.	P. F. Contribution			
4.	Gratuity			
5.	Others, if any			
	Total of Schedule IV			

SCHEDULE—V

CAPITAL EXPENDITURE

Item No.	Head of expenditure	Particulars of expenditure	Estimated amount.	Cost per hectare
1.		Construction of .....staff quarters at Rs..... per quarters.		
2.		Construction of .....labour quarters at Rs .....each.		
3.		Purchase of a tractor for internal transport of goods at Rs		
4.		Purchase of..... hand operated sprayers at Rs .....per sprayer.		
		Total of Schedule V		

SCHEDULE - VI

RUBBER SALES INCOME

1. RMA Sheets ... ... Tonnes at Rs ... ... per tonne
2. BBC Rubber ... ...Tonnes at Rs ... ...per tonne
3. Latex .....Tonnes (DRC) at Rs..... per tonne
4. Scrap .....Tonnes at Rs.....per tonne
5. Others

Total of Schedule VI

BUDGET SUMMARY

Expenditure of Division I (Schedule I)	Rs.
Expenditure of Division II (Schedule II)	Rs.
Factory Expenses (Schedule III)	Rs.
General Expenses (Schedule IV)	Rs.
Capital Expenditure (Schedule V)	Rs.
Total Expenditure:	
Revenue from the sale of rubber (Schedule VI)	Rs.

—0—