Rubber Board Annual Report

1992-93, 1993-94

Item No. 4



122 Board Meeting
10—8—1993

# ANNUAL REPORT OF THE RUBBER BOARD FOR THE YEAR 1992-'93

THE RUBBER BOARD
(Govt. of India, Ministry of Commerce)

KOTTAYAM 686 001
KERALA STATE

# THE RUBBER BOARD

## Annual Report on the activities for the year 1992-93



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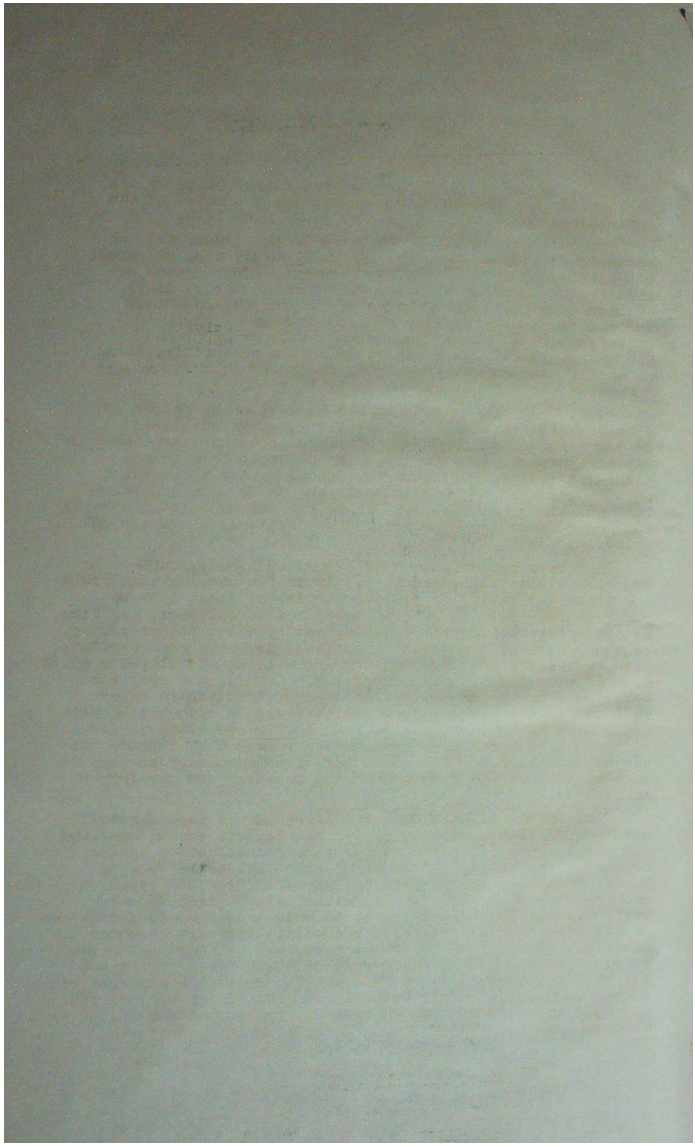

# ANNUAL REPORT FOR THE WORKING OF THE RUBBER BOARD FOR 1992-93

## PART - I

## INTRODUCTION

This is the annual report of the Rubber Board on its working for the year 1992-93, containing a summary of the activities from 1st April 1992 to 31st March 1993.

Rubber plays an important role in the industrial and economic development of the country. Cultivation of rubber was introduced to the country during the first decade of this century. Large planters were the pioneers. Small holders made their appearance later. The Government of India constituted the Rubber Board as a body corporate primarily to promote the rubber plantations under the Rubber Act, 1947. In order to undertake scientific, technological and economic research, the Board established the Rubber Research Institute of India in 1955.

India had to evolve suitable package of practices for development of the rubber plantations. With sustained research and development activities coupled with extension and advisory services for transfer of technology to the planters' fields, the rubber producing sector had a quick change-over from the traditional methods to modern cultivation practices. India soon became the fourth largest natural rubber producer in the world, after Thailand, Indonesia and Malaysia.

The research efforts made significant contributions to the rubber plantation industry. India evolved the high yielding clone RRII 105 with yield potential of about 2500 kg per hectare. Switchover from seedlings to buddings, evolving suitable fertiliser schedules for mature and immature rubber, pest and disease management practices, improved crop exploitation techniques and improved crop processing had played a vital role in enhancing rubber production. Growing the crop with leguminous ground cover, application of fertilisers after soil and leaf analysis, crop exploitation in association with yield stimulation, processing technically specified rubber and process aid rubbers, consumption research to improve the technological properties of rubber, tissue culture etc. are some of the current thrust areas in research and development activities.

The Rubber Plantation Development Scheme implemented from the VI Plan period is by far the largest scheme operated for development and promotion of rubber cultivation in the country. The scheme provides for financial assistance to small growers in the traditional areas and for all types of growers in the non-traditional areas to undertake rubber cultivation. Input subsidy and technical advice and assistance at all stages of the planting and maintenance are extended in addition. A total of 72,670 hectares was planted during the VI Plan period against the target of 60,000 ha. During the VII Plan the achievement was 74,364 ha. against the target of 40,000 hectares. During 1990-91 and 1991-92 the achievement exceeded the target. During 1992-93, the target was 15,900 hectares and the indication is that it would be achieved.

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## Performance during 1992-93

The overall performance of the rubber plantation industry during 1992-93 has been impressive. Production of natural rubber increased to 393,490 tonnes from 366,745 tonnes, recording a growth rate of 7.3%. The continuous heavy rains during the monsoon had adversely affected the production. Usually the rainy season will be over by around mid August, but in 1992 it continued up to the middle of October. This resulted in heavy loss in tappable days.

The consumption of natural rubber during the year increased by 8.9% to 414,105 tonnes against a growth rate of 4.3% during 1991-92. The notable improvement in consumption was mainly due to the excellent export performance of the auto tyre sector. The auto tyre manufacturing units recorded a growth rate of 12.2% in the use of rubber.

## Price

During the year the price of rubber fluctuated between Rs.2275/- and Rs.2800 per quintal for RMA-IV grade depending on supply and demand position. The average price during the year was Rs.2550/- as against Rs.2141/- in the previous year. A quantity of 5,999 tonnes of RMA-V grade rubber was exported during April-June period from the carry over stock held by the SPC from the previous year. A private plantation company has also exported 11 tonnes DRC of centrifuged latex. On 5th January 1993, the Government of India revised the benchmark price as Rs.23.45 for RMA-IV grade rubber and as Rs.22.95 for RMA-V grade per quintal.

## International developments

The world production of natural rubber during 1992 went upto 5.54 million tonnes from 5.32 million tonnes during 1991, recording an increase of 4.1%. World consumption of natural rubber improved to 5.47 million tonnes from 5.19 million tonnes recording a growth of 5.4%. The average price of RSS-3 grade rubber during 1992 declined to 212.5 Ringgits in Malaysia from 216.7 Ringgits during 1991. The fall in price was mainly due to the poor demand for rubber. The projected production and consumption of the International Rubber Study Group for 1993 are 5.59 million tonnes and 5.52 tonnes respectively. Actuals for 1991, 1992 and production for 1993 clearly indicate that supply continues to be in excess of the demand.

The Association of Natural Rubber Producing Countries (ANRPC) organised a special meeting of Member Countries at Ministerial level in Thailand in April 1992. The exporting countries were very much concerned about protracted low price of natural rubber (NR) and its implications on the livelihood of the small farmers. The meeting noted that the International Natural Rubber Agreement (INRA) has an important role to play in the development of the natural rubber industry. While acknowledging that the INRA 1987 has brought about a measure of price stability, the Ministerial Meeting concluded that the price has, however, been stabilised at low levels and the development objectives have yet to be adequately addressed. They urged the exporting countries to work for the attainment of the price stabilisation objectives and also the developmental objectives of the Agreement in the interests of the viability of the NR industry. The meeting of Ministers resolved to seek a decision on renegotiation at

the INRO Council session in May 1992. The meeting noted that structural changes in the NR market and associated factors have affected the efficiency of the price determining mechanism. It was decided that all matters relating to the marketing of NR should be examined in detail with a view to overcoming the imperfections in the NR market and developing appropriate marketing arrangements to ensure sustained and continued investment in the NR industry. The Ministry reaffirmed their confidence in the NR industry as a major contributor to the export earnings and economic development of the Association of Natural Rubber Producing (ANRPC) countries.

The 16th Assembly of the ANRPC and its connected meetings were held during the first week of October 1992. The Assembly noted that the depressed NR market was the result of poor demand and structural oversupply caused by the poor performance of OECD countries and developments in the Commonwealth of Independent States. Globalisation of tyre industry and related developments had also eroded the bargaining position of producers. The INRA did not bring about the expected results in terms of remunerative prices for NR.

One of the most important measures recommended by the Assembly was the development of a programme to coordinate production and marketing strategies with a view to bring about a supply/demand balance which would favour remunerative prices. The assembly approved the recommendation on the multi-lateral clone exchange programme submitted by the Expert Committee. Smt.J.Lalithambika, Chairman and Sri Jacob Thomas, Vice-Chairman of the Rubber Board represented India at the meetings.

The 34th Assembly of the International Rubber Study Group (IRSG) was held in Singapore from 16th to 21st November, 1992. The Assembly estimated the demand and supply position of rubber during 1992 and 1993. The projections made by the Assembly indicate that the share of NR in total consumption may decline from 64% in 1991 to 63% in 1992 and again to 62% in 1993. In 1992, the global consumption of natural and synthetic rubbers was 14.69 million tonnes. The Assembly also reviewed the developments in the NR and SR industry in member countries.

The 'International Rubber Forum' held in conjunction with the Assembly covered a period of 2 days and over 400 delegates in the rubber field participated in the deliberations. The Sessions covered 'SR Industry' and 'packaging of natural rubber'. The Session on SR industry was chaired by the Chairman, Rubber Board. The paper presented from the Indian side on behalf of one SR producer indicated that as far as general purpose SPs like SBR and BR are concerned, producers have expansion plans which would make the country self-sufficient in these rubbers. The production of other varieties of rubbers like Butyl and speciality rubbers would have to be considered seriously as the main raw materials required would be available from the downstream products of the petrochemical complexes which are expected to come up by 2000 AD. As far as NR is concerned the demand will be met by the domestic supplier.

Another paper presented stressed that with the internal consumption growth and tremendous potential in exports, Asia and Oceania is positioned for prolonged growth. Having the World's most modern SR facilities, a growing and immense population base and the contemporary rise in wealth, this region will double the growth projected for the rest of the world. India and China provides the basis for the confident optimism.

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One issue of great concern for consumers was the inadvertent contamination introduced by the timber used in the one tonne crates. More often, the crates get damaged in transit or during handling at the docks and the timber debris get included in the rubber. While the consuming countries were attempting to find out solutions through the use of specially constructed steel pallets, the need for producers efforts in this area was emphasised. The Group put up a proposal for a study of alternatives to timber and steel for NR packaging. The proposal to commission RAPRA Technology Ltd. to undertake this project with common fund financing was approved.

... For the first time India was elected to the Executive Committee of the IRSG.

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## PART - II

## CONSTITUTION AND FUNCTIONS

### 1) Introduction

The Indian Rubber Board was constituted under the Rubber (Promotion and Marketing) Act, 1947 which came into force on 19th April 1947 'to promote by such measures as it thinks fit' the development of the rubber industry in India. The Rubber Production and Marketing (Amendment) Act of 1954 made certain changes in the constitution of the Board and its name was changed as Rubber Board. This Act came into force on 1st August 1955. The Rubber Act was further amended by the Rubber (Amendment) Act, 1960 and by the Rubber (Amendment) Act, 1982. The amendment in 1982 was made by the Government to appoint a part time/whole time Chairman for the Board and an Executive Director on whole time basis (if considered necessary).

### 2) Constitution

The Rubber Board functions under theMinistry of Commerce of the Government of India. The Board has at present a full time Chairman as principal executive officer responsible for implementing its decisions and for discharging the duties under the Rubber Act. There are 25 other members consisting of -

a) Two members to represent the State of Tamilnadu, one of whom shall be a person representing the rubber producing interests;

b) Eight members to represent the State of Kerala, six of whom shall be representing the rubber producing interests, three of such being persons representing the small growers;

c) Ten members to be nominated by the Central Government, of whom two shall represent the manufacturers and four labour;

d) Three members of Parliament of whom two shall be elected by the Lok Sabha and one by the Rajya Sabha;

e) The Executive Director (ex-officio); and

f) The Rubber Production Commissioner (ex-officio).

The position of Executive Director has not been created so far.

List of the members of the Board as on 31/3/1993 is given at the end of this report.

One of the members is elected as Vice-Chairman. Various Committees are formed to review existing programmes, to examine proposals for development of natural rubber industry and to make recommendations to the Board. Seven such Committees, viz., Executive Committee, Research and Development Committee, Planting Committee, Statistics and Import/Export Committee, Market Development Committee, Labour Welfare Committee and Staff Affairs Committee were constituted.

Smt.J.Lalithambika, IAS, continued to be the Chairman of the Board.

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Sri K Jacob Thomas representing large rubber growers continued to be the Vice-Chairman till 28/12/1992. The Board elected Sri Charupara Ravi, representative of labour as Vice-Chairman at its120th meeting on 29/12/92 for the remaining tenure of the Board till 12/8/1993.

3) Functions

The functions of the Board according to Section 8 of the Rubber Act are:

(i) Promote by such measures as it thinks fit the development of the rubber industry. The measures may provide for -

a) undertaking, assisting or encouraging scientific, technological and economic research;

b) training students in improved methods of planting, cultivation, manuring and spraying;

c) supply of technical advice to rubber growers;

d) improving the marketing of rubber;

e) collection of statistics from owners of estates, dealers and manufacturers;

f) securing better working conditions and the provisions and improvement of amenities and incentives for workers; and

g) carrying out any other duties which may be vested with the Board.

(ii) It shall also be the duty of the Board -

a) to advise the Central Government on all matters relating to the development of the rubber industry, including the import and export of rubber;

b) to advise the Central Government with regard to participation in any international conference or scheme relating to rubber;

c) to submit to the Central Government and such other authorities as may be prescribed half yearly reports on its activities and the working of the Act; and

d) to prepare and furnish such other reports relating to the rubber industry as may be required by the Central Government from time to time.

4) Meetings of the Board and its Committees

The following meetings of the Board and of the Committees were held during the year;

a) Board Meetings : On 2 occasions; the 119th meeting on 19/6/92 and the 120th meeting on 29/12/1992.

b) Committee Meetings

Executive Committee : 28/9/1992

Statistics & Import/ Export Committee : 14/5/92 and 10/2/1993

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| | | |
|---|---|---|
| Combined Meeting of Executive Committee and Market Development Committee. | : | 12/11/1992 |
| Planting Committee | : | 17/7/1992 |
| Labour Welfare Committee | : | 10/7/1992 |
| Research & Development Committee | : | 14/8/1992 |

5) Organisational set up

The activities of the Rubber Board were carried out by five Departments, viz., Administration, Rubber Production, Rubber Research, Processing and Product Development and Finance and Accounts; headed respectively by the Secretary, the Rubber Production Commissioner, the Director of Research, the Director (P&D) and the Director (Finance).

The headquarters of the Board along with the Administration, Rubber Production and Finance and Accounts Departments remained located at the Kottayam Public Library Buildings, Sastri Road, Kottayam - 686 001. There are eight Sub/Liaison Offices under the Administration Department. The Rubber Production Department has 4 Zonal Offices, 34 Regional Offices, 160 Field Offices, 20 Regional Nurseries and 32 Tappers' Training Schools located at different rubber growing regions.

The Research Department and the Department of Processing and Product Development function in the Board's own buildings at Kottayam -9. The Research Department runs two Regional Research Stations in Kerala, one each in Tamil Nadu, Karnataka, Maharashtra (Dapchari), Orissa, West Bengal, Assam, Mizoram, Meghalaya and Tripura. The Pilot Crumb Rubber Factory located at Kottayam and the Pilot Latex Centrifuging factory located at Chethackal were run by the Department of Processing and Product Development which has also established a pilot plant for Radiation Vulcanisation of Natural Rubber.

The Chairman exercises administrative control over all the departments and offices. The total officers and staff under the Board as on 31/3/1993 were 1989; 177 under Group 'A', 546 under Group 'B', 1135 under Group 'C' and 131 under Group 'D'. Very cordial relations existed between the staff and the executive personnel. Their good work has resulted in the impressive record of achievement during the year.

The activities of the different departments are summarised in the following pages:

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The following main functions were executed during the year to promote natural rubber production in the country:

i) Registration of rubber estates.
ii) Planning, formulation and implementation of schemes for expansion, development and modernisation of rubber plantations.
iii) Rendering advisory and extension services.
iv) Production, procurement and distribution of high yielding planting materials.
v) Facilitation of distribution of agro-inputs requiring popularisation.
vi) Training of tappers.
vii) Demonstration and training in scientific planting and production of rubber in non-traditional rubber growing areas.
viii) Insurance of rubber plantations.

REVIEW OF ACTIVITIES

1. Registration of rubber estates:

This is a statutory function enjoined on the Board by the Rubber Act, 1947.

During 1992-93, a total of 5074 plantations were newly registered and the additional area brought under registration amounted to 3187.0 ha. Areas removed from records through cancellation of registration covered 841.65 ha. The total area progressively registered as on 31-3-93 was 3,20,295 ha and total registered units numbered 2,69,357. A large number of units and extensive areas remained to be registered.

The Board had recommended to the Government that the practice of registration should be altogether discontinued, excepting in the case of large estates and that the work of collection of statistics of area under cultivation, production etc., might be gathered through periodic census operations. Owing to extensive proliferation of units, the Board is not in a position to physically complete the registration wo Amendment to the Rubber Act is required for dispensing with the registration of small holdings. The matter is being pursued.

2. Rubber Plantation Development Scheme, Phase I:

This scheme aimed at integrated promotion of newplanting and replanting of rubber, replaced all the earlier planting subsidy schemes. The target set out was 12,000 ha per year for 5 years, 1980-81 to 1984-85.

The following incentives were offered for both replanting and newplanting of rubber:

(i) Capital subsidy of Rs.5,000/- per ha to growers owning upto 20 ha including any area planted under the scheme and Rs.3,000/- per ha to growers owning more than 20 ha.

(ii) Input subsidy to the weaker sections of growers possessing not more than 6 ha of rubber for using approved planting materials and approved fertilizers and a subsidy of Rs.150/- per ha for undertaking soil conservation work.

(iii)The beneficiaries could avail of long term agricultural credit from banks under NABARD's refinancing scheme to supplement the assistance from Board. The maximum credit per ha was limited to Rs.15,020/- Rs.17,000/- and Rs.18,700/- respectively for growers owning upto 6 ha of rubber, above 6 ha and upto 20 ha of rubber and above 20 ha of rubber. The loan advanced in 7 annual instalments was repayable in 5 instalments from the 10th to the 14th years of planting. The interest accrued upto the 7th year was payable during the 8th and 9th years. During repayment only current interest was payabl

(iv) The rate of interest on loans was 12%. The Board subsidised 3% interest to all categories of growers upto the 10th year of planting subject to limitations on the quantum of loans.

(v) Free advisory and extension support at all stages of planting and maintenance.

The cumulative progress of the scheme as on 31.3.93 is summarised below:

| | Years to which planting related | | | | | Total | | |
|---|---|---|---|---|---|---|---|---|
| | 1980 | 1981 | 1982 | 1983 | 1984 | | | |
| No. of subsidy permits issued | 17554 | 19180 | 18970 | 21533 | 25508 | 102745 | 25508 | 102745 |
| Area covered by permits (in ha) | 12123 | 13603 | 13875 | 15580 | 17552 | 72733 | 17552 | 72733 |

During the year under review, an amount of Rs.15,08,548.15 was disbursed as subsidy. The total disbursement of subsidies since the incention of the scheme came to Rs.39,87,85,202.43 as on 31-3-93.

3. Rubber Plantation Development Scheme Phase II:

The Rubber Plantation Development Scheme, Phase II was implemented from 1985 onwards for a period of 5 years. The target under Phase II scheme was only 40,000 ha in view of resource constraints.

The assistance offered under Phase II scheme were the following:

(i) Capital subsidy at the rate of Rs.5000/- per ha for growers owning upto 5 ha of rubber in traditional areas and for all categories in the non-traditional areas.

(ii) Input subsidy for the use of high yielding planting materials of advanced growth (polybagged plants) is granted at the rate of Rs.6/- per plant subject to a maximum of 450 plants per ha. Growers in the traditional region having more than 5 ha of rubber and carrying out planting under the schemes were also eligible to receive this assistance.

(iii)The beneficiaries could avail of bank loans under the agricultural refinance scheme of NABARD. The loans were advanced in 7 annual instalments and were repayable in 5 annual instalments from the 10th year of planting with a moratorium on payment of interest till the 7th year. The interest accrued upto the close of the 7th year was payable during the 8th and 9th year.

(iv) The normal rate of interest for the loan was 12% per annum. The Board subsidised 3% of the interest from the first to the 9th year to those eligible for the capital subsidy.

(v) Free advisory and extension support at all stages of planting, maintenance, tapping and processing of the crop.

Permits were issued for planting 75,782 hectares under this phase.

During the year 1992-93, a sum of Rs.2,73,50,676.00 had been paid as subsidy. The total disbursement of subsidy since inceptio of the scheme amounted to Rs.38,55,47,031.85.

4. Rubber Plantation Development Scheme Phase IIIA:

Pending approval of the 8th Five Year Plan proposals, the Board was not able to formulate Phase III of the Rubber Planta-tion Development Scheme. However, Annual Plans within a broad framework of VII Plan proposals were approved and budget provision were also granted. The Board tentatively implemented the Phase II for 1990-91 and 91-92 on the same lines as approved for Phase II as annual schemes.

The progress of implementation are summarised below:

| | Planting(ha) | | Total |
|---|---|---|---|
| | 1990 | 1991 | |
| No. of applications received | 30528 | 31501 | 62029 |
| No. of cases in which planting had reportedly materialised | 30502 | 31493 | 61995 |
| No. of cases inspected in the field | 29444 | 29778 | 59222 |
| Balance pending for inspection | 1058 | 1715 | 2773 |
| No. of reports due from inspecting staff | 193 | 333 | 526 |
| Permits issued | 21034 | 21727 | 42761 |
| No. rejected/withdrawn | 3971 | 2657 | 6628 |
| Area covered by permits | 13669 | 13685 | 27354 |
| Applications pending disposal | 5495 | 7109 | 12604 |

During the year 1992-93 an amount of Rs.3,23,13,483.95 was disbursed as subsidy. The total amount disbursed since the incept of the scheme came to Rs.11,38,41,332.00 as on 31.3.93. An amount of Rs.117,02,316/- has been disbursed as interest subsidy during 1992-93.

5. Rubber Plantation Development Scheme Phase IIID:

This is the proposed 8th Plan Scheme, successor of Phase IIIA being implemented from 1992 onwards, subject to the approval of th Govt. of India. The physical target for the plan period is 92,000 ha comprising of 42,000 ha of replanting, mainly in traditional rubber growing belt and 50,000 ha of newplanting both in tradition and non-traditional areas.Of this, 70,000 ha would be covered unde the World Bank Aided Rubber Development Project. The physical target fixed for 1992-93 was 6,400 ha for replanting and 9,500 ha for newplanting. The target could not be achieved fully due to disturbance in non-traditional areas. Details are as follows:

| | 1992 |
|---|---|
| No.of applications received | 27796 |
| No.of cases in which planting had reportedly materialised. | 27771 |
| No.of cases inspected in the field | 23198 |
| Balance pending for inspection | 4573 |
| No.of reports due from inspecting staff | 800 |
| No.of cases rejected/withdrawn | 1781 |
| No.of permits issued | 14052 |
| Area covered by permits | 9798 |
| No.of applications pending disposal | 11938 |

During the year 1992-93 an amount of Rs.3,48,08,071/-was disbursed as subsidy.

6. Insurance for rubber plantations

The insurance scheme drawn up in collaboration with the Public Sect National Insurance Company Ltd. and launched during 1988-89 was continue during the year under review. As arranged with the Insurance Company, t Insurer, the Board takes out a master policy in advance and arranges to issue thereunder policy certificates to individual rubber growers who desire to obtain insurance cover for their rubber plantations and make d remittance of premium amounts to the Board. Claims are investigated in the field by Board's field personnel and reports furnished to the Insure The latter in turn settles admitted claims through the Board. Thus, as the Board undertakes and discharges the bulk of the administrative work, the Insurer is enabled to keep down premium rates and to effect claim settlement quickly and effectively.

The perils covered are fire, fire resulting from explosion, lighter ing, bush fire and forest fire, wind, storm, tempest, hurricane, landsli hailstorm, rockslide and subsidence. The scheme covers all immature plantations under the Rubber Plantation Development Scheme as well as a mature plantations upto 22 years of age.

The rate of premium for immature areas is Rs.500/- per ha, irrespec ive of the year of planting to cover immaturity period of 1 to 8 years part thereof and Rs.473/- for mature areas to cover three year consecuti period.

The maximum liability of the insurer for plantations in the age group of 1 to 8 years is Rs.45,000/- per ha. and upon Rs.60,000/-per ha for mature trees. No salvage value of tree destroyed is deducted from the amount of compensation. Claims can be admitted after an initial waiting in period of one year for newly planted rubber and 30 days for established plantations. The insured grower has to bear 10% of the los in the case of immature rubber and 10% or Rs.1000/- whichever is more i the case of mature rubber.

As on 31.3.93, the Board had obtained two master policies covering 9408.79 ha.of immature area and 2250 ha. of mature area and issued a to of 11042 individual policy certificates for 8780.15 ha.of immature and 2374.74 ha.of mature area. Premium amount paid for the master policies amounted to Rs.51.64 lakh including payment of Rs.12,78,400/- during th current year. Amount recovered against issue of policy certificates to individual growers was Rs.46.29 lakh including current year recovery of Rs.6.64 lakh. Individual policies are being issued against the premium of Rs.6.50 lakh paid during the close of the current financial year.

The compensation paid since the inception of the scheme is Rs.21,53,881.30 to 642 certificate holders as at the close of the year. The current year's payment is Rs.12,17,645/- covering 253 nos.of policy holders.

## 7. Production and distribution of Planting Materials

The Board publishes every year a list of high yielding planting materials. During 1992-93 also the list was published.

To ensure easy availability of the recommended clone at reasonable prices the Board continued to maintain department rubber nurseries in all important rubber growing centres. The details of nurseries are given below:

| | Kerala | Total extent in ha. | Region |
|---|---|---|---|
| 1. | CN Karikkattoor | 20.23 | Kottayam Dist. |
| 2. | RN Kodackamon | 4.04 | Punalur |
| 3. | RN Perumpulickal | 4.00 | Adoor |
| 4. | RN Kanhikulam | 4.88 | Palghat |
| 5. | RN Ulickal | 5.20 | Tellicherry |
| 6. | RN Manjeri | 2.00 | Nilambur |
| 7. | RN Peruvannamooshy | 3.60 | Kozhikode |
| 8. | RN Alakode | 3.41 | Taliparamba |
| | Total | 47.36 | |

Non-traditional areas

| | | | |
|---|---|---|---|
| 1. | RN RRDS (NRETC) | 1.85 | S. Andamans |
| 2. | RN Shoal Bay | 2.29 | S. Andamans |
| 3. | RN Devarapally | 2.00 | Andhra Pradesh |
| 4. | RN Ranibaro | 8.00 | Orissa |
| 5. | RN Derrangiri | 10.62 | Guwahati, Assam |
| 6. | RN Tesso Ajur | 5.00 | Diphu, Assam |
| 7. | RN Mijungdisha | 14.00 | Diphu, Assam |
| 8. | RN Balacherra | 13.00 | Silchar, Assam |
| 9. | RN Hilara | 14.32 | Silchar, Assam |
| 10. | RN Jengitchikgre (DDC) | — | Tura, Meghalaya |
| 11. | RN Rangutia | 5.27 | Agartala, Tripura |
| 12. | RN Tulakona (NRETC) | 3.50 | Agartala, Tripura |
| | Total | 79.85 | |

### (a) Production and distribution of Planting Materials in 1992

During 1992-93 season the entire area in Board's nurseries could not be utilised which led to lower production of planting materials. The increase in fertilizer cost, wages etc. led to an overall increase in the cost of production of planting materials during 1992. So budded plants were sold at the rate of Rs 3.25 per stump and budwood at the rate of Rs 5 per metre allowing a concession of Rs 2.15 and Rs 3.50 per metre respectively for small growers.

During 1992, a total of 4,68,426 nos. of brown budded stumps, 40,529 metres of budwood, 300 nos. of poly-bagged plants and 7534 nos. of green bud sticks of various clones have been supplied to planters in the traditional area of Kerala & Tamilnadu. Distribution of planting materials at concessional price or free of cost to small growers had resulted in an expense of Rs 9,30,773.70 in 1992-93 which is treated as subsidy.

In addition to this, 1,36,260 budgrafts raised in Tripura and 2,53,400 budgrafts out of 3,57,250 raised in Board's nurseries in Assam were distributed to interested growers.

Consequent on the change over to planting of poly-bagged plants the entire quantity of plants raised in Board's nurseries could not be sold out before the nursery planting season. This resulted in the nonutilisation of the entire nursery area during 1992 nursery planting season.

(b) Procurement and despatch of budded stumps to non-traditional Areas:

During 1992, good quality budded plants were purchased from private rubber nurseries in N.E. Reg on to meet the full requirements in North East. Therefore, it was necessary to despatch only 42,250 nos. of brown budded stumps to Goa during 1992-93. There was no procurement of budded stumps from private rubber nurseries in the traditional area for despatch to N.E. Region.

(c) Procurement and supply of rubber seeds in 1992:

During the year 1992 against a requirement of about 100 lakh it was possible to procure only about 76.80 lakh seeds from the traditional area of Kanyakumari District due to the unprecedented very heavy and continuous rains during the seed collection season. The rains caused widespread decay of the pods and seeds. Therefore, the Board was forced to procure seeds from all available sources.

8. Advisory and extension services:

Officers of the Board continued to visit rubber holdings to advise growers on scientific methods of rubber cultivation, production and processing. A total of 3,669 visits were made exclusively for advisory work. Further 60 radio talks on various aspects of rubber cultivation were conducted.

Utilising the service of the Mobile Soil and Tissue Testing Laboratories a total number of 9928 soil samples were analysed and recommendations were given to growers for adopting discriminatory fertilizer application in their holdings.

(a) Demonstration of scientific tapping in small holdings:

The services of the Tapping Demonstrators were utilised for demonstration of scientific methods of tapping and processing by visits to 7125 small holdings.

In association with the Research Department the new system of controlled upward tapping (CUT) was popularised among the large growers as well as the small growers. Proper training was given to the Rubber Tapping Demonstrators attached to various Regional Offices as well as T.T. Schools.

(b) Imparting training to toppers through T.T. Schools

Regular training of growers/tappers in tapping and related activities was undertaken through the TT Schools at different locations.

At p esent 24 regular T.T. Schools are functioning in the traditional area and 8 in non-traditional area. They are:

| Sl. No. | Name of Regional Office | Name of T.T. School |
|---|---|---|
| 1. | Nagercoil | Aithully |
| 2. | Thiruvananthapuram | Valakad |
| 3. | Punalur | Nellikunnam |
| 4. | Punalur | Cheriyavelinellur |
| 5. | Adoor | Kalanjoor |
| 6. | Pathanamthitta | Mandiram (Ranny) |

| | | |
|---|---|---|
| 7. | Changanacherry | Chengaroor |
| 8. | Kottayam | Anicadu |
| 9. | Kanjirapally | Vanchimala |
| 10. | Pala | Kadaplamattom |
| 11. | Thodupuzha | Vengalloor |
| 12. | Muvattupuzha | Kamalasserry |
| 13. | Ernakulam | Karukulam |
| 14. | Trissur | Chengalloor |
| 15. | Palakkad | Mundur |
| 16. | Nilambur | Chulliyode |
| 17. | Kozhikode | Athipara |
| 18. | Tellicherry | Kelakom |
| 19. | Tellicherry | Mananthavady |
| 20. | Tellicherry | Keezhapally |
| 21. | Taliparamba | Padiyoor |
| 22. | Taliparamba | Olayampadi |
| 23. | Kanhangadu | Periya |
| 24. | Kanhangadu | Bandaduka |
| 25. | Mangalore | Mundaje |
| 26. | Mangalore | Shirady |
| 27. | Agartala (Tripura) | Pathicherry - NARTC |
| 28. | Agartala | Jurie |
| 29. | Agartala | Pathalia |
| 30. | Guwahati | Ouguri |
| 31. | Diphu | Dillai |
| 32. | Udaipur | Sachirambari |

A total of 2,356 tappers were trained in 143 batches and an amount of Rs 708,384.50 was spent towards stipend. Also collected Rs 261108.50 towards tuition fee.

Apart from this, arranged short term refresher training course for tappers in batches of 20 to 25 in selected small holdings. total number of 992 such refresher training camps were conducted giving training to 11,532 tappers.

9. Extension activities for the development of rubber cultivation in non-traditional areas.

The Board continued to promote development of rubber cultivation in non-traditional areas, where the agro-climatic conditions are found to be more or less suitable for rubber cultivation. A large number of new enterpreneurs have taken up rubber plantations. Apart from giving guidance on all aspects of rubber cultivation, the service of one Rubber Tapping Demonstrator each were utilised in the four I.T. Schools opened under the Regional Offices at Udaipur, Agartala and Guwahati for imparting practical training in scientific methods of crop exploitation and processing.

10. Procurement and distribution of seeds of Pueraria (Leguminous ground cover)

In order to popularise the use of Pueraria as a leguminuous ground cover in small rubber holdings, continued to operate a scheme for bulk procurement of the seeds for distribution in small polythene packets at subsidised rates to small growers in traditional and non-traditional areas. A quantity of 8,198.5 kg was sold to small growers at concessional rate.

Board is also raising rooted muccuna cuttings in polybags for distribution among the small as well as the large growers through Board's various nurseries.

11. Scheme for supply of low volume power operated sprayers/dusters

The scheme aimed at popularising the use of low volume power operated sprayers/dusters among small growers for control

of leaf diseases was continued. During the period 1992, low volume sprayers/dusters were supplied to RubberProducers' Societies, Co-op. Societies and individuals, disbursing Rs 3,87,550/- towards subsidy.

12. Financial assistance to small growers for purchase of rubber sheeting rollers

With a view to improving the quality of the rubber produced in small holdings, the board implemented a scheme to extend financial assistance to small and marginal farmers, for purchase of rubber sheeting rollers of standard specification. A total amount of Rs 21,55,000/- was granted as subsidy for the purchase of 2,155 rollers during the period.

13. Financial assistance for construction of small smoke houses

In order to persuade and help the small rubber growers to adopt better processing technique, implemented a scheme by offering financial assistance in the form of subsidy for construction of 85 kg capacity smoke houses. During the period 475 smoke houses were constructed under the scheme for which a subsidy of Rs 13,97,250/- was disbursed.

14. Financial assistance for irrigation in rubber plantation against drought

Irrigation has been found beneficial for establishment of young plants in the field, ensure proper growth, reduction of immaturity period, increase in yield and quick rejuvenation of tapped mark. Installation for irrigation system is capital intensive. Hence in order to motivate and promote irrigation in rubber estates, implemented a scheme for giving financial assistance against capital investment incurred by rubber growers for establishing proper irrigation facilities.

The scheme evoked very good response, bringing in a large number of applications which could not be disposed of within the allocation of funds and therefore, had to be carried over to subsequent years. An amount of Rs 2,96,817/- had been disbursed to 228 rubber growers in the traditional areas. In the non-traditional area, a sum of Rs 2,72,250/- had been disbursed among 62 growers.

15. Assistance for fencing in non-traditional areas.

One of the major constraints in the expansion of rubber cultivation in non-traditional areas is the difficuty in establishing the young rubber plants in the field during the early years due to the menace from cattle and tresspassers. In order to protect the plants from stray cattle and tresspassers proper boundary protection is needed. Heavy expenditure make small and marginal farmers unable to make investment on this. Therefore, to motivate them, implemented two schemes offering financial assistance at two different rates for SC/ST categories and general category of growers for fencing on standard pattern in non-traditional areas.

During the year '91-'92 firm orders had been placed for the supply of 134 M tonnes of barbed wire worth Rs 25,84,256/-. As the suppliers could not supply the entire quantity of barbed wire before 31/3/92, they were asked to supply balance quantity at the same rate during '92-'93. Accordingly 126 M.T. barbed wire was purchased and distributed to 187 members of SC/ST and 127 members of general category growers.

16. [illegible] to small growers in non-traditional areas

Majority of the rubber growers in the non-traditional areas are either small or marginal who have taken up rubber planting with the aid/assistance from Rubber Board. A fairly good number of the plantations have reached the yielding stage. Materials like tapping knives, latex collection cups, coagulating pans, rubber sheeting rollers and such other materials connected with crop exploitation and processing are not available in those areas and the growers are experiencing great difficulties in getting them.

The scheme provides for procurement of the materials at competitive rates from available sources and to transport them to non-traditional areas at Board's expenses and distribute to needy small growers allowing the subsidy as applicable in traditional areas.

Under the scheme, the following materials were supplied to various offices of the Board in non-traditional areas for distribution to eligible growers during 1992-93.

| | Item | Number | | Amount |
|---|---|---|---|---|
| 1. | Rubber sheeting rollers | 68 | nos | Rs 5,97,040.00 |
| 2. | Plastic cups | 52,000 | " | Rs 56,100.00 |
| 3. | Aluminium Dish | 2,206 | " | Rs 1,01,476.00 |
| 4. | Aluminium Sieves | 110 | " | Rs 8,690.00 |
| 5. | Cup hanger | 61,300 | " | Rs 33,102.00 |
| 6. | Spout | 60,000 | " | Rs 3,960.00 |
| 7. | Rubber Coat | 1,460 | kg | Rs 12,337.00 |
| 8. | Adhesive | 50 | " | Rs 280.00 |
| 9. | Ethephon | 1 | Lit. | Rs 108.80 |
| 10. | Polythene sheet | 105 | kg | Rs 5,512.50 |
| 11. | Jabong knives | 340 | nos. | Rs 6,120.00 |
| 12. | Michigoledge knives | 62 | nos. | Rs 2,514.00 |
| 13. | Template | 6 | nos. | Rs 102.24 |
| 14. | Emissan | 46 | kg | Rs 4,862.20 |
| 15. | Sodium bisulphite | 10 | kg | Rs 264.00 |
| 16. | Paranitrophenol | 21 | kg | Rs 1,617.00 |
| 17. | Marking knives | 75 | nos. | Rs 375.00 |
| 18. | Formic Acid | 1,120 | kg | Rs 50,295.00 |
| | | | Total | Rs 8,84,755.74 |

| | | |
|---|---|---|
| Insurance | Rs | 3,070.00 |
| Transport | Rs | 1,16,850.00 |
| Labour Transport | Rs | 4,780.70 |
| Subsidy | Rs | 66,000.00 |
| Total | Rs | 1,90,700.70 |

17. Extension Activities for the Development of Rubber Cultivation in N.E. Region

The Board continued to promote development of rubber cultivation in non-traditional areas, where the agro-climatic conditions are suitable for rubber cultivation. Large number of farmers are taking up rubber plantation in the region. An area 761 ha has been planted in Tripura under RPD Scheme and 127.82 h under Block Planting Scheme in Assam. 255.41 ha was planted in 1992-93. The Block Planting & Group Planting Schemes are being taken up on priority basis especially for the benefit of the SC /ST growers in the NE Region. The proposed area under the scheme for 1993-94 is 500 ha.

For the functional efficiency, the two Regional Offices in Tripura have been brought under the Jt. RPC, NREPC, Agartala detaching them from ZO, Guwahati.

Two farms developed under NREPC are located at Surendranagar and Harimangalpara. Now the plants in the 1987 area in Surendranag have attained tappable girth and preparation for commencement of tapping are in progress.

Training programmes for farmers and tappers have been offere in different centres to demonstrate and educate modern and scienti practices in planting, maintenance, exploitation, processing etc.

18. Nucleus Rubber Estate & Training Centre, Andamans

The project was originally conceived as part of the Special Area Development Programme for Andaman & Nicobar Islands to serve the following twin objectives:

i) To serve as a pilot project for development of rubber plantations in the Islands.

ii) To provide facilities for resettling repatriates of Indian origin from Burma and Sri Lanka on the plantation.

The project was formulated and implemented at the instance of the Govt. of India in the Ministry of Rehabilitation. The land required for the purpose is made available rent free by the Andama & Nicobar Administration. Execution of the project was entrusted to the Rubber Board. A Rubber Research Cum Development Station was established at Shaithankari in South Andamans about 35 km road distance from Port Blair. Rubber plantation was raised progressively in an area of 202.55 ha between 1965 and 1968. Subsequently in 1975, the project was handed over to the Board to be run as a demonstration plantation.

In 1986, the Govt. of India approved a project for conversion of the Rubber Research Cum Development Station into a Nucleus Rubber Estate and Training Centre (NREPC) to serve the training and demonstration needs of the entire islands, at a total estimated cost of Rs 114 lakhs. This was due to be completed by the close of the 7th Five Year Plan period in 1989-90. But the project implementation suffered setbacks owing to refusal of local agencies including Andaman Public Works Dept. to take up the civil constructions and other works and prevalance of protracted industrial disputes with the plantation labour. The civil works were therefore entrusted with the National Building Construction Corporation Limited (NBCC). It is expected that the work would be completed by 1993-94. The labour disputes have been settled during the year and normalcy is being steadily regained. At present there are only about 48,300 trees which will be regrouped into 161 blocks of 300 trees. The production of rubber during 1992-93 from the NREPC is given below:

| | |
|---|---|
| Sheet rubber | 64,852.00 kg |
| Scrap rubber | 16,527.50 " |
| Foam sheet rubber | 362.50 " |
| Total | 81,742.10 kg |

The Board has incurred an expenditure of Rs 75,82,723.79 towards running expenses of the NREPC during the year 1992.93.

A rubber nursery of 1.5 ha also is maintained for production and supply of high yielding planting materials to interested growers.

19. VIGILANCE FLYING SQUAD

In order to maintain constant vigil against delays, possible malpractices and corruption in field work and to arouse awareness of devotion to duty amongst the staff working in the field, an Anticorruption Cell (Vigilance Flying Squad) was constituted under a Dy.Rubber Production Commissioner during 1989. The working of the unit has indeed given the needed alert to the field staff and others in Regional Offices, Field Offices, Nurseries and Tappers' Training Schools. The effect has been mostly in the nature of preventive Vigilance. It has brought about high level of integrity and promptness amongst the field staff and others and effectively checked the tendency towards malpractice and indiscipline.

During the period Vigilance Flying Squad visited a total of 359 units. Surprise visits and inspections were conducted in 197 offices (both Regional Offices and Field Offices), 10 visits to Nurseries, 20 visits to Tappers Training Schools and 132 visits to holdings/estates connected with the various schemes of the Board to ascertain the genuineness of the reports submitted by the inspecting officers. This included 46 cases of overchecking and enquiries in response to the complaints received. Irregularities were observed in 7 cases and appropriate action was taken against five officers responsible for the same. The remaining two cases were referred to the Vigilance Officer for detailed investigation. Minor lapses were noticed in 19 cases and suitable instructions/advice were issued for future guidance.

20. RUBBER PROMOTION

Organisation of Rubber Producers Societies among Village level small growers and implementation of short term productivity improvement measures formed the major rubber promotional activities. During the period under reference approval was given to 59 RPSs.
Key card system of documentation was introduced for bringing better control and for facilitating compilation of information. Regular collection of returns on the performance of RPSs was continued. Annual Accounts and progress reports received from the RPSs were scrutinised and wherever defects/omissions were noticed, appropriate suggestions and remedial measures were offered. Classes were conducted at Regional Office levels to enable the Societies to familiarise themselves with the accounting procedures of RPSs. Detailed printed instructions on proper maintenance of records were issued to all the Societies. Required registers were also printed and given to the RPSs.

Pool Fund Scheme for supply of Estate Inputs

During the period under report various schemes were operated for the supply of various estate inputs to small growers at concessional rates. Under the schemes, the following materials were supplied to the growers.

| Item | Qty. of material purchased and distributed |
|---|---|
| Urea | 2767 MT |
| Potash | 1938 " |
| Mussorie | 5876 " |
| Copper Sulphate | 236 " |
| Copper Oxychloride | 72 " |
| Spray Oil | 368 KL |
| Rubber Coat | 17 MT |
| Sieves | 4050 Nos. |
| Headlight | 3600 Nos. |

contd..

| | |
|---|---|
| Aluminium Lish | |
| Aluminium Can | 72000 Nos. |
| Polythene Sheet | 1100 Nos. |
| Rainguarding Compound | 154.5 MT |
| Plastic Cup | 470 MT |
| | 15.8 lakh |

21. NRETC AGARTALA

NRETC had two farms, one Nursery-Cum-Demonstration plot and one Nursery at the beginning of the year. The Nursery which was on lease was wound up.

(1) Marimancal Farm

Total of 73 ha.was planted as on 1.4.1992. No further extension of the planting was possible due to security reason The routine maintenance was carried out. The Bailey bridge which was proposed to be installed in the Project, though procured, was decided to be disposed. A total number of 3602.5 mandays were engaged and an amount of Rs.74,253/- paid as labour wages.

(2) Surendranagar Farm

The farm had a net area of 98.07 ha. The routine maintenance was carried out. The work was spread over 12,752 mandays and Rs.2,57,599.50 paid as labour wages. 15% of the trees have exceeded 50cm.girth and another 40 to 50% of the trees will be achieving tappable girth by September 1993.

Construction of Office, Staff quarters, labour quarter (20 Nos.) are in progress. The total value of construction work done during the period is approximately Rs.54 lakh. In addition, NECC had already completed fencing at a cost of about Rs.23 lakh. A deep tube well also was drilled in the

(3)Tulakona-Nursery-Cum-Demonstration Plot.

The centre has an area of 14.32 ha.of which 8.86 hectare is under plantation. There are 3,716 budwood points and during the period from 1.4.1992 to 31.3.1993 66,941 budded stumps were distributed from this nursery. A new seedling nursery has been started and at present 79,596 seedling stock is available. Workers were engaged for 4,732 man-days and Rs.89,763.50 was paid as labour wages.

(4) Surendranagar Nursery

The Tripura Rehabilitation and Plantation Corporation Ltd.was distributed 13,119 budgrafted stumps. The nursery was wound up in August,1992.

(5) Training

One batch of farmers (21 growers) were offered 5 days 5cays Training and 15 batches of farmers (147) were offered one day training. Apart from this training programmes were offered in all the 14 group plantation centres and 9 block plantation centres periodically on various cultural operation

(5(A) Tappers Training.

In all the four tappers Training Schools in the State regular training was offered. However there was some disruption in two schools, one located in North Districts under the jurisdiction of Regional Office, Agartala and the NRETC School at Paticherry due to security problems and lack of sufficient trainees sponsored by the TTIPC.

In T.T.School, Paticherry of NRETC, two batches were offered training. NRETC also arranged off campus Tappers

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Training under the Rubber Producers Societies in two centres covering 36 trainees. The T.T.School, Pathalia attached to Regional Office, Agartala offered training for 5 batches (86 students) and T.T.School Jury also under Regional Office, Agartala offered training for two batches involving 46 number of trainees.

(6) Publicity

Publication of Rubber Samachar on a Bi-Monthly basis was continued. Arranged a press tour for UNI, PTI and other members of the press to various farms and block plantation centres. Media(Press as well as AIR) gave wide coverage to the activities.

(7) Group Meetings

The Regional Offices arranged 58 group meetings besides conducting six one day training programmes.

(8) Development Activities

The issue of subsidy cheques further to the bifurcation of activities of North Eastern Regional commenced during 1991-92. However, functions of a full fledged Zonal Office were attached to NRETC from 1.4.1992 onwards. A new scheme on block Plantation was implemented in collaboration with the Government of Tripura during this year. The activities of the NRETC thus were diversified to accommodate development activities. The R.P.L. scheme being implemented had problems and a group approach was felt to be the ideal one and hence a new scheme for group planting was initiated. Details of financial assistance to farmers are given below.

| | | | |
|---|---|---|---|
| 1) Phase -I | Rs. | 82,935.20 | |
| 2) Phase -II | Rs. | 9,95,294.00 | |
| 3) Phase -III | Rs. | 21,29,422.50 | |
| 4) Maintenance Grant | Rs. | 8,27,962.40 | |
| 5) Construction of Smoke house | Rs. | 49,000.00 | |
| 6) Interest Subsidy | Rs. | 7,81,187.00 | |
| 7) Assistance for Boundary protection | Rs. | 64,855.00 | |
| 8) Cost of budded stumps | Rs. | 14,31,131.00 | |
| 9) Bee-keeping | Rs. | 2,117.00 | |
| 10) Cost of Fertilizer | Rs. | 4,69,889.00 | |
| 11) Cost of barbed wire | Rs. | 9,76,430.25 | (payment effect from Zonal Office,Gauhati.) |
| Total | Rs. | 78,10,223.35 | |

(9) Block Planting

Block planting was started initially in 4 centres in April,1992 itself. Subsequently action has been initiated to raise polybag nursery in 5 more centres for field planting in 1993. Out of 9, one colony is a Scheduled Castes settlement tlement Colony. Four more centres have already been identified covering an area of 350 ha. Including this total area identified for the block plantation as on 31.3.1993 is Rs.57.47 lakh. We have received an amount of Rs.41.08 lakh being the contribution from the Government of Tripura. The expenditure incurred includes advance paid to NBCC for providing fencing /will be 916 ha. The total expenditure incurred under the Block Plantation

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in 4 block plantation centres where field planting was carried out. Details of block planting are given below:

| | |
|---|---|
| 1. No.of Centres | : 9 |
| 2. Total area | : 566 ha. |
| 3. No.of beneficiaries | : 366 |
| 4. Area planted during 1992. | : 127.82 ha. |
| 5. Area proposed for 1993 planting | : 305.00 ha. |
| 6. No.of polybags prepared | : 1,64,390 |
| 7. No.of budded stumps planted in polybags | : 85,224 |

(10) Group planting

Group Nurseries were started in 14 centres for promoting group planting. The scheme cover 265 beneficiaries over an area of 250.78 ha.

(11) Construction.

The entire construction works at Agartala have been coordinated by the NRETC. All works under Phase-1 programme entrusted with the NECC have been completed. A new agreement has been signed with the NECC. An amount of Rs.53.58 lakh was paid against running bills for Surendranagar works and Rs.64.56 lakh as advance for works at Agartala Complex and fencing (Phase-II construction).

The total expenditure of the NRETC from 1.4.1992 to 31.3.1993 was Rs.2,95,31,811.00

22. EASTERN INDIA RUBBER DEVELOPMENT PROJECT

Considering the scope for expansion of rubber development in the non-traditional areas of Orissa, Coastal Andhra Pradesh, West Bengal and Bastar District of Madhya Pradesh, the Board had in 1987 submitted comprehensive proposals for organised development of rubber plantations in these areas. The Government had accordingly, sanctioned a project in 1988 with the following components:

1) Establishment of a 200 ha.Research Farm in Orissa.
2) Establishment of a 250 ha.Nucleus Rubber Estate & Training Centre(NRETC)
3) Assisting Development of Rubber Plantations in 1000 ha. in the region by the end of 7th Five Year Plan period (i.e.1989-90)

In order to execute the work, a Zonal office was opened in Bhubaneswar in 1988 followed by 3 regional offices at Baripada (Mayurbhanj District), Bhubaneswar(Puri dist.) and Berhampur (Ganjam District). The establishment included a Field Office at Maredumilli in East Godavari District of Andhra Pradesh. A regional nursery was also established at Ranibaro in Ganjam Dist. and another at Devarappally in Maredumilli in East Godavari District of Andhra Pradesh. However, regional nursery at Ranibaro has been closed down during the year. Work on the NRETC could not be started due to non-allotment of land by the State Government.

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Activities undertaken upto the close of 1991-92 had resulted in establishing rubber plantations as follows:

| | |
|---|---|
| Orissa | 286.75 ha. |
| Andhra Pradesh | 178.00 " |
| Madhya Pradesh | 2.00 |
| | 466.75 " |

In Andhra Pradesh, rubber planting is undertaken under Tribal Development Programme by the concerned Government agencies.

23. REGIONAL OFFICE PORT BLAIR

A Regional Office was started at Port Blair in 1985 to cater to the needs of the prospective rubber growers of Andaman and Nicobar Islands, where from 87 subsidy permits were issued covering an area of 65 ha.

## IV. RUBBER RESEARCH

The Rubber Research Institute of India - the Research Department of the Rubber Board - had its inception in 1955. It is located about 8 Km.east of Board's Headquarters, at Kottayam. Research activities are focussed on productivity increase, quality improvement, reduction in immaturity period as well as reduction in cost of production and NR conservation by improving service performance of products. Agrotechnological upgradation is given due thrust both for the traditional and for the nontraditional rubber growing areas.

reduction

At the headquarters, the Institute has major research divisions and research supporting sections. Regional research stations are established in different states where rubber is grown, or likely to be grown on a commercial scale to concentrate on location specific problems.

The Institute maintains healthy liaison both at the national and at the international level. The Director of Research is coordinating the international research programme on tapping panel dryness. The Institute publishes the Indian Journal of Natural Rubber Research and during the period under review two issues were brought out.

Scientists of the RRII served as teaching faculty for various training programmes. They also undertook a number of visits for on the spot of study of problems and advisory services, in addition to participating in seminars.

### 1. AGRONOMY AND SOILS DIVISION

The Agronomy and Soils Division continued investigations on nutritional requirements of high yielding clones of rubber at various stages of growth in the different agroclimatic regions of South India. Irrigation and water requirement, soil moisture management, soil conservation, intercropping, forms and methods of fertilizer application and standardization of analytical methods were also under investigation. The project on DRIS, a modern approach for interpretation of foliar analytical values, were in progress. Discriminatory fertilizer recommendations were offered to estates and small holders from the RRII and also from the eight Regional Laboratories.

The three experiments laid out in three locations with a view to assessing fertilizer requirement of clone RRII 105 were in progress. Girth was measured at periodic intervals and the data taken till 1992 revealed that maximum growth was obtained by the combined application of 30 kg each of N and $P_2O_5$ $ha^{-1}$.

The two experiments, laid out at Konney Estate and RRII Experiment Station in 1988 with a view to assess the nutrient requirement of experimental clones, were being continued. The girth data indicated that there was no interaction of clone X fertilizer treatment. Among the 10 clones, performance of RRII 203 was much better followed by RRIC 100. Seven field experiments in four locations, to find out the optimum fertilizer requirement, were in progress. Yield obtained from different estates were worked out and the following combinations recorded the maximum yield.

| Region/estate | | |
|---|---|---|
| Vaniampara Estate | NPK | 20:20:60 |
| Kinalur Estate | NPK | 20:40:30 |
| Malankara Estate | NPK | 20:0:60 |
| New Ambadi Estate | NPK | 20:0:30 |

Multilocational trial on fertilizer use efficiency was laid out in seven locations. Yield data recorded during the eight years did not show any significant difference among the treatments. This shows that the sources of fertilizers may be selected based on cost and a combination of urea, MRP and MOP would be cheap. If discriminatory fertilizer recommendation is followed the doses of these fertilizers could be reduced.

The experiment on density of planting, growth and yield was in progress at Shaliacary Estate. Girth data recorded till 1992 indicated that there was no significant difference in girth of plants even six years after planting between a population range of 445 to 598. Thus the density of planting within the range studied in this experiment has not affected the growth of rubber.

Based on lysimeter studies, the mean evapotranspiration for a three year old plant was found to be 4.97 $mmd^{-1}$ which works out to be 40 litres of water per plant per day. Between drip irrigation and basin method, there was no difference. The project on utilization of diagnosis and recommendation integrated system (DRIS) to formulate optimum nutrient ration is being continued. Computer programme was developed with the help of TNAU for the calculation of DRIS indices and the indices for different levels of N, P, K, Ca and Mg. were worked out.

The experiment laid out during 1990 to study the effect of different levels of K fertilizer on yield and latex flow was in progress. After continuous application of graded level of $K_2O$ for two years, the yield data recorded during October 1992, December 1992 and January 1993 revealed that the highest dry rubber yield was recorded from 60 kg $K_2O$ $ha^{-1}$ applied plots, followed by 30 kg $ha^{-1}$. It was also found that the application of higher level of $K_2O$ (above 60 kg $ha^{-1}$) decreases dry rubber yield.

The possibility of using dilute HCl for extraction of K, Ca and Mg in Hevea foliage was investigated. The values obtained were correlated with dry ashing method. Significant positive correlation was obtained between the two methods.

The division analysed 8550 soil and 2520 leaf samples for advisory purpose and discriminatory fertilizer recommendations were offered to estates and small holdings based on analytical results.

## 2. BIOTECHNOLOGY DIVISION

Propegation of rubber by in vitro culture of shoot tips was continued. These plants would be planted in the field alongwith the bud-grafted control plants. This would facilitate the comparison between tissue culture plants with bud-grafted plants. Progress is being achieved in refining the plant regeneration pathway of somatic embryogenesis. A population of budded plants were produced and put in the field from a somaclonal variant obtained through tissue culture. Recombinant DNA technology has been initiated for developing means for incorporating 'foreign' genes into rubber genome for crop improvement

Isoelectric focusing was done for fingerprinting five different isoenzymes in budded Hevea plants (Clone RRII 105) to study the enzyme polymorphism due to stock-scion interaction. This may be due to the polymorphic root stock genome.

## 3. BOTANY DIVISION

The Botany Division continued to concentrate on genetic improvement through hybridzation, clonal selection and ortet selection. Investigations on propagation, anatomy and cytogenetics were also in progress.

### Breeding and selection

Annual observations on girth and secondary characters were recorded from 39 small scale trial (belonging to hybridization and clonal selection, ortet selection and special techniques), 11 large scale trials and 20 block trials. Monthly yield was recorded from all mature trials. Sixty three clones of 1982 HP in three small scale trials were opened for tapping and data on yield and yield components were recorded periodically. Thirty four clones selected from the 1986 and 1988 HP series were planted in three small scale trials. Ten ortet selections from small holdings were also laid out in a small scale field trial. A total of 24 and 47 clones of 1986 and 1988 HP series respectively were laid out in field experiments for clonal nursery evaluation alongwith RRII 105 as control after recording juvenile growth. A block trial of six clones was laid out at Shaliacary estate and another six clones were supplied for a block trial proposed for 1993. A polybag nursery of five selected clones was established at Wyanad. Monthly yield and d.r.c were recorded from a block trial of 12 clones which was newly opened for tapping. Monthly girth and juvenile yield were recorded from two multidisciplinary trials on clone evaluation. Four new field experiments were planned and the corresponding planting materials were multiplied and established in a polybag nursery. These include 15 ortet clones, 15 heterotic hybrid clones, five selections resultant of mutation and polyploidy, 150 selections from progenies of prepotent parent and 30 seedlings each, selected from 11 families resultant of hybridization. The 1993 hybridization programme was carried out employing parent clones selected on the basis of components of yield, drought tolerance and canopy characteristics. A total of 9300 hand pollinations involving 29 cross combinations were attempted.

With a view to study the performance of clonal composites, five experiments were laid out. These comprised various proportions of clone blends and a control monoclonal plot of RRII 105 at the Central Experiment Station, Chethackal. One set of experiments on clonal composites was also laid out at the Regional Experiment Station, Nagrakata, West Bengal. One nursery experiment and another field trial incorporating 10 clones of high, medium and low yields were laid out for studies on early evaluation.

### Propagation and planting techniques

All the field trials connected with propagation and planting techniques were maintained properly and annual recording of growth and secondary characters was carried out. The trial on depth of planting was opened for tapping. Nursery experiments were initiated for comparative studies on polyclonal and assorted seedlings, twin stocks and single stocks, bench grafts and green buddings. Monthly yield recording was carried out in the experiment on genetic basis of stock scion relationship.

### Anatomy

Detailed observations on 52 clones were recorded for characterization of popular clones on the basis of bark anatomical parameters. Latex vessel rows of four cytotypes were assessed. In association with the Biotechnology Division, a study of embryo development in germinating seeds was initiated. Developing embryos at different stages were fixed and processed.

The study on wood quality was continued and ethrel application was carried out. The bark renewal study was also continued. Seventy five bark samples were processed and observed. A new study on ovule development was initiated. Hand pollinations of specific clone combinations were attempted and ovules at different stages of growth were fixed and processed

Cytogenetics

Monthly yield recordings and annual girth measurements were done in polyploid and irradiated trials. Incorporating seven selected clones from the irradiated population and RRII 105 as control, a trial was laid out at CES, Chethackal. Pollen studies were carried out in 10 popular clones and studies on pachytene and karyotype analysis were initiated.

4. GERMPLASM DIVISION

The Germplasm Division continued its activities of introduction, collection conservation, exchange and evaluation of genetic resources of Hevea.

Budwood materials of 12 clones of exotic and indigenous origin were supplied to North East Research Complex, for establishing a source bush nursery. Nucleus materials were also supplied to research divisions, when needed. Five IRCA clones were planted at Central Experiment Station and quarterly observations on these genotypes are being continued. These clones were also supplied to Botany Division for large scale trials. A few genotypes from the 1984-85 introduction of the wild germplasm from 1981 IRRDB exploration were selected and being observed for morphological and anatomical traits.

Evaluation of the Wickham materials conserved in the three gardens were continued. Monthly yield recordings and annual girth measurements of all the clones were taken.

Preliminary studies on the variation of the structure of bark of 100 genotypes from 1981 collection indicated that the genotypes from Mato Grosso are comparatively better than those from Acre and Rondonia. Seventy two genotypes from 1989 planting were studies for variability, degree of associations among characters and their direct and indirect effect on juvenile yield. Higher estimates of heritability and genetic advance for most of the characters studied indicated their significance in breeding programme. Growth performance and other morphological observations were taken from 175 wild genotypes of 1990 evaluation trial. The data generated after the first four seasons were classified based on their performance using metroglyph and index-score analysis. The study revealed that there area few wild genotypes showing stable performance with high score irrespective of the seasons. Two evaluation trials were initiated, one with 80 and the other with 63 genotypes from the 1981 IRRDB collection at Central Experiment Station. Another set of 50 genotypes were planted for ortets trial.

at the

Search for an alternative source of natural rubber suitable for the non-traditional marginal lands points to the possibility of trying Ceara rubber (Manihot glaziovii). An exploration to the hill tracks of Tamilnadu resulted in the identification of a large population of Manihot genotypes growing wild. Action is in progress to procure germplasm for further studies.

## 5. MYCOLOGY AND PLANT PATHOLOGY DIVISION

The field experiments on clonewise and regionwise recommendation of rubber spraying against abnormal leaf fall disease combined with crop loss studies were carried out at three locations. In the highly susceptible clone RRIM 600, over the higher dose of 10 kg of COC per ha was found to be inadequate in high rainfall area resulting in 30% crop loss, whereas in low rainfall area (Kanyakumari District) 4 kg per ha was found to be adequate and can result in crop gain in 18.5%. In high volume experiment, for high rainfall areas, even for the tolerant clone RRII 105, 3000 l of 1% Bordeaux mixture par ha was found to be essential. Zinc-Bordeaux mixture combination at 0.5% was found to be equally effective as 1% Bordeaux mixture with a cost reduction of 30%. In the permanent crop loss experiment at Central Experiment Station, in the fourth year 57% crop loss was found in RRIM 600. The trend was irregular in clones RRII 105, RRII 110 and GT 1. The new fungicide 'Akomin' was found to give better control of shoot rot disease alongwith better growth of plants. Systemic fungicides Bavistin and Calixin as 1.5% dust were field tested against powdery mildew disease at Wayanad and better control was achieved over sulphur dusting. Prophylactic spraying of 3 to 4 rounds of 1% Bordeaux mixture or 1% Cobox L which can give about 25% better control of pink disease at an additional cost of Rs.64/- per ha. Certain wood extracts were found to highly inhibit pink disease pathogen in culture.

Field experiment on dual inoculation of Rhizobium and Beijerinckia indicated enhanced growth for the cover crop compared to Rhizobium alone. Eight promising V A Mycorrhizae were isolated. 75% rock phosphate with phospo bacteria was found to be equivalent to 100% rock phosphate in pot culture studies. The results of the field trials on biological control of white grubs indicate the scope for recommending Beauveria brongniartii. Phorate 10 G kept in the field in cloth bags was found to repell vertebrate pests.

## 6. PLANT PHYSIOLOGY AND EXPLOITATION DIVISION

The Plant Physiology and Exploitation Division conducted experiments in the fields of exploitation, environmental plant physiology, biochemistry, tapping panel dryness (TPD), intercropping of medicinal plants, etc.

Extensive efforts were made for popularising controlled upward tapping (CUT). Fifty one Tapping Instructors were given training to use the modified gouge knife for CUT. The Development Officers of 11 regional offices were also given orientation training on CUT. Tappers of 5 major estates and a number of small holdings were also given training on CUT. Results of the ongoing trial showed high returns from CUT. Now CUT is getting acceptance among planters and tappers alike. In clone RRII 105 sufficient data was generated to justify third daily tapping instead of alternate daily tapping. Incidence of TPD is lower in the former. In the long run, third daily tapping results in higher returns. Tapping of one third spiral cut also appears promising. In this case, alternate daily tapping is possible in clone RRII 105 with less incidence of TPD and reasonably good yield. In clone RRII 203, daily tapping of one third spiral cut for three years resulted in 22% additional income. These systems will be useful to growers under special circumstances. In clone RRII 105, weekly tapping with stimulation showed good response. In another trial comprising mixed clones also, weekly tapping with stimulation showed good response. Two hectare area was planted with 13 clones for clone blend studies.

In the high elevation, clone RRII 118 showed higher girth and yield. In the North Konkan, clone RRIM 600 showed higher yield. High mortality of clone RRII 105 in the initial stages of establishment under drought conditions was found to be associated with high inhibition of photosynthesis. In clone RRIM 600, which has better establishment success, such inhibition of photosynthesis is less. Under low light conditions, clone RRII 105 showed higher photosynthetic rate when compared to RRIM 600. Methods were standardised for screening of clones for establishment success in dry situations and for cold tolerance. For cold tolerance, membrane stability and double bond index of membrane lipids are important parameters for screening. More than 25 clones were screened for membrane thermostability and epicuticular waxes. Five hundred plants of 12 clones were planted to screen for establishment success under drought.

In the Konkan region, irrigation resulted in 40% growth increment. Fifty per cent saving of water was possible by drip irrigation. By irrigation, tapping can commence atleast two years earlier.

One year systematic study showed that intercropping of three species of medicinal plants did not cause any inhibition of latex yield. Studies on latex diagnosis have so far shown promising results. Hypodermal extraction of latex was also performed. Extensive studies on TPD gave good results.

## 7. RUBBER CHEMISTRY, PHYSICS AND TECHNOLOGY DIVISION

The Rubber Chemistry, Physics and Technology Division continued investigations on improvement of natural rubber processing, chemical modification and technological aspects.

### Primary Processing

Installation of a small solar drier of 200 kg capacity was completed in collaboration with "ANERT" and its evaluation has been in progress. Preliminary results indicated that modifications in the design are essential. Evaluation of the modified solar drier of 800 kg capacity is also being continued. A mini solar dryer with a maximum capacity of 45 sheets was also fabricated and evaluated. Efforts are being made to increase the capacity to around 100 sheets. A detailed study of the ageing aspects of sulphuric acid coagulated sheet rubber is being carried out. Studies on the corrosion aspects of using sulphuric acid indicated no significant corrosion either for the aluminium pans or for the sheeting roller, if the recommended conditions are followed.

### Chemical modification of natural rubber

Construction of a pilot plant for the production of epoxidised natural rubber was completed and production of 25 kg batches has commenced. 2, 6 di t-butyl-p-cresol antioxidant was found to impart high PRI for ENR. Bench scale preparation of ENR-50 has been further continued to produce the same at lower reagent concentrations. Phosphorous modification of natural rubber by the reaction between epoxidised liquid natural rubber and dibutyl phosphate was attempted. The reaction was carried out in bulk and solution medium and the products were characterised by chemical analysis and other experimental techniques. Phosphorous modified product revealed good flame retardant properties in a natural rubber formulation.

Rubber Technology

Studies on the effect of storage on the properties of centrifuged latex and vulcanizates therefrom have been continued. Adhesives consisting of a 5% solution of NR in solvent naphtha alongwith 5 phr PF resin and 10 phr china clay gives high peel strength for rubber to rubber bonding. Actyllation of short sized fibre was found to improve the band strength between the fibre and rubber. Incorporation of aluminium powder to rubber mixes was found to improve the thermal conductivity of the latter. Attempts have been made to develop products like school bags from NR-EVA blends.

A study was initiated to compare the properties of ISNR-20 with sheet rubber (RMA 4, RMA 5) and Estate Brown Crepe. Samples were being periodically collected and evaluated.

8. AGRICULTURAL ECONOMICS DIVISION.

The Agricultural Economics Division is primarily concerned with the studies relating to economic aspects of natural rubber cultivation, processing, marketing and end uses. Emphasis was given to studies pertaining to ancilliary sources of income such as intercrops, by-products etc.

Commercial evaluation of planting materials was continued and the fourth report is under preparation. A sample survey of rubber small holdings in Tripura was conducted on 1991 by covering 60 sample holdings located in the three planting districts of the State. The major contributing factor for growth of small rubber holdings in Tripura was the introduction of New Planting Subsidy Scheme in 1979. Around 60 per cent of the growers was illiterate and only 25 per cent could avail of the full instalments of the subsidy. Method of tapping was found to be unscientific and the immigrant tappers from Kerala were paid a monthly salary ranging from Rs.1200 to Rs.1500. Only 40 per cent of the sample holdings had proper sheet processing facility while only 35 per cent has sold the produce to the licenced dealers. Nevertheless the price realisation in the Agartala market was comparable to the prevailing prices in the terminal markets of Kerala. The major problems identified were (i) lack of scientific knowledge on cultivation, cultural practices, exploitation and process; (ii) inadequate availability of material inputs and (iii) a primitive mode of marketing network.

A study on transportation of natural rubber was conducted in 1990, which is an updated version of two previous surveys carried out in 1967 and 1978. The total quantity of rubber transported from Kerala to other consuming centres in 1990 was 2.4 lakhs MT. About 67 per cent of the transportation was accounted by manufacturers, 20 per cent by dealers, 9 per cent by estates and 4 per cent by processors. Dominant position was for road traffic, mainly due to acceptance of small quantities, minimum procedural formalities and absence of transhipment costs.

A study was undertaken in 1992 covering 36 rubber marketing co-operative societies in Kerala. Among them 24 were engaged in activities other than rubber marketing such as distribution of planting materials, development of nurseries, rubber processing, rubber goods manufacturing and banking operations. Around 70 per cent of the societies was supplying material inputs to member growers and had own facilities for plant protection activities. The average quantity of rubber handled by a society amounted to 1302 MT during 1991-92.

Experiments conducted by the Agronomy and Soils Division showed that dried latex sludge, a waste material from latex centrifuging industry could be used as a phosphatic source for immature rubber. Economic analysis indicates promise. Studies on ancillary products (rubber wood, rubber seed oil and cake, rubber honey) were continued with the main objective of estimating annual production and consumption. During the period under review, estimated rubber wood production is 12 lakh cubic metres and the packing case manufacturing industry was the single largest consuming sector accounting for about 63.5 per cent of stem wood. The relative share of rubber wood consumed in the treated wood processing industry registered a substantial increase from 3.90 per cent in 1991-92 to 6.90 per cent in 1992-93. During 1992-93 rubber seed oil production is estimated to be 4300 MT and oil cake 8000 MT.

## 9. RESEARCH SUPPORTING SECTIONS

### (a) Library and Documentation.

The Library and Documentation Centre continued its important role of communication and dissemination of information. During the year 1992-93, 125 new books and 133 bound volumes of journals were added. The library subscribed to 175 journals and 9 dailies. About 150 other journals were also received either as gift or an exchange. Three issues of documentation list, three numbers of rubber alert, 150 issues of SDI Bulletin, one issue of list of new additions and one issue of current list of periodicals for 1992 were compiled and distributed. As part of data base development 5220 documents have been indexed.

### (b) Instrumentation

Timely maintenance and proper repairs of all the instruments in the different research divisions and various regional research establishments were promptly carried out by the Instrumentation Section. Installation and calibration of new equipments added to RRII were also undertaken.

### (c) Art/Photography

Preparation of photographs, charts, graphs etc. for publication as well as for presentation of scientific papers in conferences and symposia was attended to.

### (d) Statistics

Experimental data from different research divisions were statistically analysed. Statistical layouts for field experiments and laboratory investigations were prepared. Local area network (LAN) was established at RRII and file movements relating to purchases were computarised. A computer programme for fertilizer recommendation was designed and is being tested. Training was given to a batch of Scientists of the RRII on MS-DOS, DBASE IV, LOTUS 1-2-3 and wordstar.

## 10. EXPERIMENT STATIONS

The RRII has two experiment stations, the Central Experiment Station at Chethackal near Ranni and the Experiment Station at its headquarters at Kottayam.

Central Experiment Station has a total area of 254.8 ha. An area of about 20 ha. was planted for different experimental purposes during 1992-93. The total crop during the period was 1,72,164.30 kg. The total rainfall received during the period was 4138 mm. There were 209 permanent workers and 202 casual workers on the rolls. The total mandays engaged for different operations in the station during 1992-93 was 63,968.50. The dispensary functioning in the station provided services to 12,864 patients.

The Experiment Station at the headquarters of the RRII has a total area of 32.87 ha. The area under rubber planting is 25.23 ha, of which 4.13 ha was under tapping during the last part of the year under report. There were 38 permanent and 56 casual workers on the rolls. The total mandays engaged during different operations was 13,520. The total rainfall received during the year was 4080.7 mm.

## 11. RESEARCH COMPLEX FOR NORTH EASTERN REGION AND REGIONAL RESEARCH STATIONS.

Research activities in the regional research establishments in the different states of the North East and West Bengal were co-ordinated by the Research Complex having its headquarters at Guwahati.

### RRS Guwahati

The Regional Research Station, Assam concentrated mainly on clone evaluation, germplasm, nutritional requirements and cover crops. The station has undertaken trials in the planters' field in the different agro-climatic zones and 16 blocks of high yielding clones were planted to study their yield performance. Plants were regenerated from undifferentiated callus of Pueraria and Mucana and from anther callus and mature and immature embryos of Hevea. However, the regenerated plants established in vermiculite, did not survive the second stage of hardening in soil medium due to lack of proper hardening facilities. Several strains of Agrobacterium were also tested to study their ability to transfer oncogenic gene to Wickham and Brazilian germplasm materials. Survey of diseases and pests and experiments for their effective control were also in progress.

### RRS Agartala

The Regional Research Station, Tripura continued investigations on 18 ongoing projects. It was observed that generally rubber plants respond to higher doses of fertilizers both in the immature and in the mature phases. Trials on planting density, clone evaluation and exploitation system were also in progress. Characteristics of the rubber growing soils was under study. Over 400 genotypes were maintained. The Station also undertook analysis of 1053 soil samples, 823 leaf samples and 3059 latex samples for advisory and experimental purposes. An adjoining area of over 12 ha was purchased for laying out new field experiments.

### RRS, Meghalaya

The Regional Research Station, Meghalaya concentrated on evaluation of clones, potential intercrops, fertilizer requirements under different ground cover, rubber based cropping systems and nursery studies, survey of diseases and pests, mushroom culture and rabbit rearing. About 50% of the trees in the clone trial laid out in 1985 at the Ganolgre experimental farm have attained tappable girth and are proposed to be opened during 1993.

RRS, Mizoram

At the Regional Research Station, Mizoram, multidisciplir evaluation of clones, upkeep of polyclonal seedgarden, chemic control of lalang and planting techniques for cover crop were under progress. Evaluation of the effect of splitting of fer lizers on the growth of young rubber plants was initiated. In fluence of physiographic features on growth was also under st

RRS, West Bengal

The Regional Experiment Station, West Bengal, was establi in 1989 to evolve suitable agrotechnology for successful rubbe plantation ventures in North Bengal region. Three clone trial which include 22 high yielding clones, have been attempted. A nutritional trial has also been laid out.

RRS, Maharashtra

Plant Physiological investigations and studies on irrigat were continued in the Regional Research Station, Maharashtra. Evaluation of clones, studies on intercropping, observations o polyclonal trees for location specific selection of genotypes, were also under progress. Results of an experiment on mulchin revealed that mulched plants with irrigation recorded signific growth.

RRS, Orissa

Of the total area of 40.0 ha, 22.0 ha has been brought unc planting at the Regional Research Station, Orissa. Regular mulching of plant bases, drawing of silt pits and life souring irrigation were adopted to ensure proper growth and development of the plants. The clone evaluation trials, field experiment on polyclonal seedling trees, nutritional studies and trial on planting densities were continued. During 1992, the total precipitation was 1663.4 mm, mostly concentrated in the period June to September. The maximum and minimum temperatures record were 42.5°C and 10.0°C respectively, the former in May and the latter in December.

RRS, Madhya Pradesh

The Regional Research Station, Madhya Pradesh, has an area of 47 ha for experimental planting. Polyclonal seedlings planted during 1991-92 over an area of 2.5 ha were under proper upkeep.

HBS, Karnataka

Field trials on growth and exploitation systems, ortet selections, clones and genetic parameters were properly maintain at the Hevea Breeding Sub-station, Karnataka. The total rainfal recorded was 4795.5 mm, of which over 1200.0 mm was received during the month of July. The maximum and minimum temperatures recorded were 38.5°C and 10.0°C respectively, the former in March and the latter in January.

HBS, Tamilnadu

Both the breeding orchards in the Hevea Breeding Sub-statio Tamilnadu, were maintained and the trees were induced to flower. Casualities were filled in the large scale trial. Cover crop establishment was also done. Potential high yielding genotypes were spotted, after test tapping in the nursery. Attempts were in progress to clone them for further studies.

12. TRAINING

Short-term training course on rubber culture and estate management.

Three batches of this eighteen-day course were organised and 52 participants from the States of Assam, Andaman & Nicobar Island, Goa, Kerala, Karnataka, Tamilnadu and Tripura attended.

Training course for rubber goods manufacturers.

Separate courses were held for persons interested to set up rubber goods manufacturing industries based on latex and dry rubber during the period under report.

Four batches of the course on manufacture of products from latex were organised. The total number of participants was 81 from Kerala, Tamilnadu, Maharashtra, Karnataka, Haryana, West Bengal, Andhra Pradesh, Meghalaya and Goa.

Three batches of the course on manufacture of products from dry forms of rubber were conducted for 50 participants from Gujarath, Andhra Pradesh, Madhya Pradesh and Kerala, including four deputees from Naval Base, Cochin.

Training course on rubber processing.

One batch of this course was held exclusively for twelve deputees of the State Farming Corporation of Kerala Ltd., Punalur from 8th to 12th March,1993.

Training course on production of latex thread.

A four-day course on production of latex thread was organised for nine entrepreneurs from Haryana, Kerala and Tamilnadu from 2nd to 6th November,1992.

Training course on production of latex foam.

Two participants, one from Messrs.Varanath Industries, Aruvithura and one from Goa attended the training course on latex foam held from 18th to 22nd January 1993 and 22nd to 26th February 1993 respectively. Another course, for three participants, from Andhra Pradesh was in progress.

One-day course on Beekeeping.

Fourteen rubber growers had undergone a one-day training on beekeeping convened on 23rd February,1993.

One-day course on Mushroom culture.

Two batches of this one-day training course were held, one on 17th December 1992 and the other on 25th February 1993. A total number of 21 small growers participated.

Training course on rubber sheet grading.

Four participants had undergone this one-day training held on 2nd November 1992, 4th January 1993, 15th February 1993 and 23rd March 1993. The courses were arranged at the Marketing Division of the Board.

COURSES ON SPECIALISED SUBJECTS, ORGANISED ON REQUEST FROM GOVERNMENT DEPARTMENTS AND OTHER AGENCIES.

Course on development of products from latex and dry rubber.

One batch of the combined course, of ten days duration, on development of products from latex as well as dry rubber was organised for seven deputees of the North Eastern Industrial Consultant, Agartala, Tripura from 17th to 30th November 1992.

Course on manufacture of Catheter.

One representative from Messrs.Biomedicals (P) Ltd., Ahmedabad had undergone a five-day specialised course on manufacture of catheter held from 2nd to 6th November,1992.

TRAINING PROGRAMME FOR INSERVICE PERSONNEL.

Training for newly recruited Jr.Field Officers

Two batches of pre-entry training on familiarisation on rubber were held for 18 newly recruited Junior Field Officers from 23rd June to 26th July 1992 and 7th to 11th December,1992.

Training for Excise Duty Inspectors

Under this programme, one Excise Duty Inspector had undergone two days training on the principles of rubber compounding of latex and dry rubber, assessment of rubber content in rubber products, machinery used in rubber products manufacture, etc.on 22nd and 23rd December,1992.

SEMINARS AND FIELD TRAINING.

During the period under report, fourteen one-day training programmes were organised on various aspects of rubber cultivation, for familiarisation of scientific methods of rubber cultivation and crop processing. 442 growers visited the RRII under the Sasthra Darshan Programme. Of the fourteen one-day programme three were one-day practical-cum-demonstration training programme in the farmers fields.

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V. Processing and Products Development

The Department of Processing & Product Development continued activities in areas of technical consultancy to rubber processing and rubber goods manufacturing industries, quality control of raw rubber and latex produced in the country, monitoring the working of the factories set up under the Kerala Agricultural Development Project, and under the RPS Companies, management of the two factories under the Rubber Board, executing the civil works undertaken at various locations and also providing engineering support to rubber processing and manufacturing units established under public and private sector companies. During the period a radiation vulcanisation plant was commissioned and regular production of radiation vulcanised latex has started. The latex produced in the unit is being sold to manufacturing units to produce nipples, soothers and surgical tubes. Usefulness of this latex in the production of catheters is being assessed. The Department also provided assistance to Fertilisers and Chemicals, Travancore Ltd in solving one of their major production problems by producing indigenously a set of gaskets made of silicon rubber which was needed in their caprolactum plant in Cochin. This development of the gaskets helped FACT in saving substantial foreign exchange. A summary of the work done by different divisions during the year ending 31st March, 1993 is described under.

Engineering Division

Engineering and technical assistance was provided to six Crumb Rubber Factories functioning under the Kerala Agricultural Development Project.

During the year a 10 tonnes per day crumb rubber factory was commissioned for Pamba Rubbers under the direct supervision of the Engineering Division. A latex centrifuging factory was also established under the Thiruvalla Taluk Rubber Marketing Co-operative Society. The factory is now ready for production. A pale latex crepe factory was also established and started production in Sreekandapuram in Thaliparamba under the name Sreekandapuram Latex (P) Ltd. The entire engineering services for commissioning this factory was also provided.

Establishment of a latex based crumb rubber factory at Palai under the name Kavanar Latex Pvt Ltd is nearing completion. All the engineering services for this factory are provided. Another 10 tonnes per day Crumb Rubber Factory is being established near Vithura under the name Ponmudy Rubbers. Civil worksfor this factory are nearing completion. A latex centrifuging factory is under construction at Kannur under the management of Kannur District Co-operative Rubber Marketing Society. The intermix factory that is being established by the Kerala State Cooperative Rubber Marketing Federation at Kaduthuruthy has almost reached the stage of commissioning. Also provided support to M/s Malankara Rubber and Produce Company Ltd for the expansion of their existing crumb rubber factory and for establishing a latex centrifuging unit under this estate. For establishment of latex centrifuging factory under the State Farming Corporation at Punalur, civil works are nearing completion. The factory has procured the necessary machinery for the processing operations.

Development Works.

During the period developed a pre-breaker for use in crumb rubber factory. This is a machine which can substantially improve the productivity in crumb rubber factories.

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The first pre-breaker developed was installed in the Indiar Crumb Rubber Factory, Palai. The machine is giving very useful service and the production in that factory has substantially enhanced after its installation. Also developed a shredder and installed at RCRF. The machine is giving useful service in the factory and is found to be an efficient replacement for the hammer mill. Power requirements at the crumb production stage can be almost reduced to half by using shredders.

2. Quality Control

During the period the Quality Control Laboratory has analysed latex and dry rubber samples for assessing various properties. The total number of parameters determined during the period is 49,276 In addition, specification laboratory has analysed inspection samples for determining 5586 parameters. The details of analysis done and the number of inspections done are given in table 1 below.

Table - 1

| Month | Central lab | | Specification lab | |
|---|---|---|---|---|
| | No. of samples received | No. of parameters determined | No. of inspections | No. of parameters determined on inspection samples |
| 1) April | .. | 2632 | 342 | 19 |
| 2) May | 1043 | 3235 | 440 | 10 |
| 3) June | 1318 | 3762 | 423 | 21 |
| 4) July | 1654 | 4243 | 427 | 14 |
| 5) August | -- | 3653 | 424 | 15 |
| 6) September | 1652 | 4484 | 360 | 20 |
| 7) October | 2067 | 4901 | 668 | 18 |
| 8) November | 1940 | 4997 | 630 | 17 |
| 9) December | 2509 | 5736 | 112 | 16 |
| 10) January | 2163 | 4907 | 581 | 21 |
| 11) February | 1878 | 2234 | 576 | 29 |
| 12) March | 1785 | 4492 | 603 | 44 |
| Total | 18,009 | 49276 | 5586 | 244 |

Miscellaneous items of work

Provided designs for effluent treatment plant for the centrifuged latex factory of the Rubber Marketing and Processing Cooperative Society, Meenachil and two foam factories. Advice on effluent treatment system wasgiven also to M/s Malankara Rubber and Produce Company and Plantation Corporation of Kerala Ltd.

3. Technical Consultancy

Prepared 16 project reports during the period. Of these seven were for establishing rubber processing units and the remaining for establishment of rubber goods manufacturing units.

a) Development works

An important development work is the production of viton gaskets required by the Caprolactum plant of the FACT. In the plant these gaskets are required in large quantities and have to be replaced once in six months or so. The factory was

importing these gaskets. This helped them in reducing their shut down time. Foreign exchange for importing gaskets also could be saved. Other important items developed are uridrain condoms, natural rubber diaphragms, shoe soles and heels and natural rubber chords required by NPOL.

b) Factories established

Assisted setting up at Palghat a footwear unit under the management of German Leprosy Relief Association. This unit has started production. Another factory for producing hospital sheeting is under construction at Punalur under the management of RPL Ltd.

c) Quality control of rubber chemicals and rubber products.

Analysed rubber products from 280 different parties and necessary advice was given on quality improvement.

d) Seminars, exhibitions.

Organised three seminars during the period for promoting rubber goods manufacturing in different rubber growing regions. Three exhibitions were also arranged at different places along with industrial seminars.

e) Production of Radiation Vulcanised Latex

The establishment of the Pilot Plant for producing Radiation vulcanised Natural Rubber Latex (RVNRL) was completed during the period. 11 batches of latex were radiated in the plant after trial production. The properties of the vulcanised latex are in line with expectations. The product is now being used by small scale industries in different parts of the country for producing articles like nipples, soothers and surgical tubes.

4. Factory Management

During the period produced 310.4 tonnes of technically specified rubber in the Pilot Crumb rubber plant and 140.4 tonnes of concentrated latex in the pilot latex processing centre. The details of the production in the two factories are given in table II below.

Table-II

| Month | Production in PCRF in tonnes | Production in PLPC in tonnes |
|---|---|---|
| April | 7.85 | - |
| May | 22.45 | 7.06 |
| June | 21.32 | 17.06 |
| July | 24.5 | 8.83 |
| August | 26.42 | 15.00 |
| September | 22.5 | 14.12 |
| October | 27.37 | 4.8 |
| November | 22.87 | 14.91 |
| December | 30.25 | 20.68 |
| January | 40.1 | 14.5 |
| February | 30.83 | 15.5 |
| March | 34.02 | 8.02 |
| | 310.48 | 140.45 |

....

Production in the two factories were not satisfactory during the initial months owing to difficulties like non-availability of raw materials, shortage of power and water. Production picked up during subsequent months and a satisfactory level was maintained after the month of October-November 1992. There is also substantial improvement in the quality of produce in the two factories. A major constraint in the latex processing centre is the non-availability of latex for processing as the production in Board's estate is not adequate to meet the installed capacity. Rubber Producers Societies in the neighbourhood are being encouraged to collect latex and sell to this unit for ensuring better capacity utilisation. A few RPSs are laready supplying latex to this centre.

The performance of the factories established under the Kerala Agricultural Development project were also satisfactory during the period. One of the factories, viz. M/s Indiar Crumb Rubber Factory Palai has exceeded their installed capacity duringthe period. Performance of the Crumb rubber factories at Muvattupuzha and Thodupuzha is also impressive. Although improvement was recorded in the performance of the crumb rubber factories at Palghat and under the Federation these were not adequate to ensure proper profitability. Three of the companies established under the Rubber Board with equity participation from RPSs have also started production during the period. They are M/s Pazhassi Rubbers, Periyar Latex and Pamba Rubbers. All these factories have not achieved sufficient production during the first year of operation for ensuring adequate return on investments. The position is being conveyed to their management for making necessary improvement in production and profitability targets.

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5. MARKETING ACTIVITIES

Provided marketing support to six trading companies on procurement of latex sheet and scrap rubber. All the marketing activities of the three trading companies namely M/s Kanhangad Rubbers (P) Ltd., M/s Kunhalimarakkar Rubbers(P) Ltd and M/s Bharathapuzha Rubbers(P) Ltd were directly handled and provided support and assistance to them for the successful operation of latex and sheet collection activities.

Marketing support and assistance was also provided to processing companies whenever required. Special efforts were taken to find out marketing outlets for M/s Pamba Rubbers (P) Ltd which started commercial production during the period. Assistance was rendered to M/s Indiar Crumb Rubber Factory to dispose off their piled up stocks.

Marketing support to PCRF, PLPC & Others.

Was in constant touch with potential buyers of crumb rubber and concentrated latex and secure orders for 191 MT of various grades of crumb rubber and 62 KL of concentrated latex processed by the Pilot Crumb Rubber Factory and Pilot Latex Processing Centre. The trading operations undertaken by M/s GAICO Ltd., Kuravilangad were regularly monitored.

Price Collection & Price support operation.

During the reporting period also collected and compiled market prices of various forms and grades of rubber and disseminated through the press. Also furnished these information to the Ministry and other Governmental agencies. Price details compiled and publicised are :-

1) Daily prices of RMA-4 and ungraded rubber at Kottayam & Kochi.

2) Prices of scrap rubber twice a week.

3) Weekly average price of RMA-1 to 5.

4) Weekly and monthly prices of centrifuged latex.

Also collected and compiled the Malaysian prices of RSS and SMR grades and concentrated latex for official use.

Price Support Operation

Since the prices of rubber were ruling above the trigger level, no action was warranted during the period. However, follow up work of the procurement operations which ended on March 1992 had to be continued during the early months of the reporting period.

Export of Natural Rubber

Since the Government removed natural rubber from the negative list of exports, attended to numerous enquiries from potential exporters as well as foreign buyers. Information in this regard were collected from various sources such as the office of the Jt.Controller of Imports & Exports, Cochin Export Processing Zone etc and the available details were passed on to the required parties. All the promotional activities in this matter were also handled.

Natural Rubber Subsidy

Continued to compile Natural Rubber Subsidy and intimated the same to the Ministry of Commerce, CAPEXIL, Sports Goods Export Promotion Council and various offices of the Controller of Imports and Exports.

.....

Directory of Rubber Goods Manufacturers in India.

Steps were initiated to bring out a revised edition of the directory.

Training, Quality Control & Inspection

Conducted training classes for collection agents/ representatives of RPS and Co-operative Societies on sheet rubber processing and grading. Collection agents of latex collection centres were given training on drc estimation, preservation procedure and other aspects related to latex collection centres. Sixty one representatives of RPS/ Co-operative Societies were trained in processing and grading of sheet rubber and 25 persons from the latex collection centres were given practical training in drc estimation, preservation of field latex, maintenance of records etc. Gave technical support to the Trading Companies to organise sheet procurement, in connection with the 'Peak Season Procurement Scheme' implemented by the Kerala State Co-operative Rubber Marketing Federation. Practical training in the grading of sheet rubber was imparted to the representatives of RPSs.

Inspection

During the period under report, 66 latex collection centres were visited for cross checking drc estimation and for verifying the records maintained at these centres on preservation and storage of latex. Suitable follow up actions were taken wherever found necessary.

## PART VI - ADMINISTRATION

The major functions in Administration consists of constitution/reconstitution of the Board and its committees, maintenance of establishments, collection of cess, licensing and market intelligence, collection of statistics, publicise Board's schemes and activities, carry out labour welfare measures, attend to vigilance and legal functions, official language implementation and disbursement of retirement benefits.

The functions are carried out through the following sections/divisions/offices:

-1 Establishment (General Administration & Board Secretariat, Personnel Administration and Entitlements)
-2 Excise Duty
-3 Market Intelligence
-4 Licensing
-5 Statistics & Planning
-6 Publicity
-7 Labour Welfare
-8 Internal Audit
-9 Legal
10 Vigilance
11 Official language implementation, and
12 Sub Offices and Liaison Offices.

### 1.1 General Administration/Staff Welfare/Labour Welfare:

The activities of the Board for the year 1991-92 were documented through Annual Report which was presented to the Government as required under clause 8(3)(c) of the Rubber Act.

During the period 39 employees were given financial assistance for the construction of their houses by advancing Rs.22,63,570/- and Rs.3,54,320/- to 52 employees as vehicle advance. In addition an amount of Rs.19,01,500/- was drawn from the HDFC and distributed to 24 employees towards house building advance. Maintenance works of the office buildings and the staff quarters were done as necessary. Work on the new headquarters building was in progress. It is expected that construction of the seven storey building would be completed by January 1994. The services of the post, telegraph, telephone and telex were harnessed to provide good communication facilities between the Board and its clientele. In order to improve upon the telecommunication service an electronic telephone branch exchange was commissioned in March 1993.

### 1.2 Personnel administration

Selection of suitable personnel to vacant posts for the smooth functioning of the Board was ensured by following recognised recruitment rules and statutory provisions relating to reservation of posts for candidates from the SC/ST community. There were properly constituted selection

committee/DPCs for selection of personnel by evaluating the merits/skills of the candidates. Periodical returns on the personnel recruited were sent to the Government and to the Employment Exchange. Service books, leave accounts and personal files of employees were properly maintained. Retirement benefits were given to 17 employees including 1 who had left on voluntary retirement.

The total number of officers and staff under the Board as on 31-3-1993 was 1989 as detailed below:

| Name of Department | Group A | Group B | Group C | Group D | Total |
|---|---|---|---|---|---|
| Administration Dept. | 26 | 66 | 163 | 20 | 275 |
| Rubber Production Dept. | 74 | 330 | 716 | 72 | 1192 |
| Research Department | 56 | 113 | 195 | 34 | 399 |
| Dept. of P&PD | 17 | 27 | 37 | 4 | 85 |
| Finance & Accounts Dept. | 4 | 10 | 23 | 1 | 38 |
| GRAND TOTAL | 177 | 546 | 1135 | 131 | 1989 |

2 Excise Duty

The Rubber Board has been entrusted with the responsibility of collecting the duty of excise (cess) on all rubber produced in India under section 12(2) of the Rubber Act, 1947. The cess is collected on the quantity of rubber acquired by the manufacturers. Every manufacturer has to obtain a licence from the Board to acquire natural rubber, who is bound to give monthly and half yearly returns showing the quantity of rubber acquired and consumed. It is on the basis of the purchases reported in their half yearly returns that the assessment of cess is normally made.

(a) Issuance of licence for the year 1992-93

The function of issue of licences include the work of issue of fresh licences and renewal of the existing licences for the subsequent years. The details of licences issued for 1992-93 are given below:-

| | |
|---|---|
| Fresh Licence | - 506 |
| Renewal of licence | - 4814 |
| Total | - 5320 |

During the period, the licence in respect of two manufacturers were suspended on account of serious irregularities and malpractices detected in their business. Besides, the licences in respect of 16 units were cancelled at their request. Thus the total number of licensed manufacturers at the end of 31-3-1993 was 5302. The statewise distribution of licensed manufacturers as at the end of 31st March 1993 are furnished hereunder:-

| Sl.No. | Name of the State/ Union Territory | No. of units |
|---|---|---|
| -1 | Kerala | 909 |
| -2 | Punjab | 661 |
| -3 | Maharashtra | 585 |
| -4 | Tamil Nadu | 549 |
| -5 | West Bengal | 498 |
| -6 | Uttar Pradesh | 492 |
| -7 | Delhi | 370 |
| -8 | Gujarat | 344 |
| -9 | Haryana | 247 |
| 10 | Karnataka | 241 |
| 11 | Andhra Pradesh | 177 |
| 12 | Madhya Pradesh | 94 |
| 13 | Rajasthan | 82 |
| 14 | Bihar | 41 |
| 15 | Pondicherry | 25 |
| 16 | Goa | 24 |
| 17 | Chandigarh | 22 |
| 18 | Orissa | 16 |
| 19 | Himachal Pradesh | 12 |
| 20 | Assam | 5 |
| 21 | Tripura | 4 |
| 22 | Jammu & Kashmir | 2 |
| 23 | Sikkim | 1 |
| 24 | Manipur | 1 |
| | Total | 5302 |

Prepared and supplied the list of licensed manufacturers for reference and to the rubber dealers and the public.

(b) Issue of licence for the year 1993-94

In addition, issued 2853 licences (38 licences to new manufacturing units and 2815 licences to the existing units by way of renewal of licence) for the year 1993-94.

Registration of letters of authorisation to purchase rubber by Dealers on behalf of Manufacturers as Agents:

Apart from the issuance of licence to the manufacturers, registered 1216 letters of authorisation issued by various manufacturers in favour of dealers to purchase and despatch rubber in their behalf.

Registration of Branch/Purchase Depot:

On the basis of the applications received from the manufacturers, 3 new branches/purchase depots were registered during the year under report.

Letter of authorisation to purchase rubber:

Apart from the regular licences, special authorisations to 8 organisations/institutions to acquire rubber for experimental purposes were issued, after collecting the relevant cess in advance.

Assessment of duty of excise (cess) on rubber:

During the financial year 1992-93, obtained 10125 half yearly returns from various rubber goods manufacturers and sole crepe producers. Individual reports of inspection of the books of accounts of manufacturers numbering 3202 were received from various Liaison Officers and other inspecting officials. On the basis of such reports and based on cross checking of monthly returns of dealers and manufacturers, additional assessments were made in 217 cases on the quantity of 2086 tonnes of rubber involving a cess amount of ₹s.10.43 lakhs.

The total amount of cess assessed during the period was for ₹s.17.76 crores.

Collection of Duty of excise (cess) on rubber:

The collection of cess on rubber reached an all time high of ₹s.18.05 crores during 1992-93 exceeding the target of ₹s.18.00 crores. The said amount was duly remitted to the bank for being credited to the Consolidated Fund of India. Viewed against the backdrop of ₹s.17.76 crore assessed during the period, this superb collection was made possible by the constitution of an Arrear Clearance Cell which helped in recovering a substantial amount of arrears of cess on rubber.

3 Market intelligence

Detection of bogus/unlicensed dealings in rubber, arranging surprise inspections of the business premises of dealers for verification of their books of accounts and correctness of physical stock and cross verification of the correctness of statutory returns filed by dealers/manufacturers and processors for ascertaining the correctness of the quantity of rubber acquired to prevent evasion of cess on rubber formed the major part of market intelligence activities. A total of 2316 inspections are also conducted for ascertaining the suitability of the applicants and their business premises to issue licences to deal in rubber, registration of branches of the dealers and approval of new/additional premises.

Detection of irregular transactions

With a view to curtail bogus transactions and detect bogus dealers, timely watching and scrutiny of Form N declarations and connected returns were undertaken. As a result, suspicious transactions of certain dealers and manufacturers could be detected in time and loss of revenue to the Board and Government could be prevented. Based on the irregularities/malpractices detected, the licences in respect of 6 dealers were suspended.

The surveillance exercised through the 3 check posts at Walayar, Manjeswaram and Kavalkinar supplemented by inspections helped in unearthing many malpractices.

An amount of Rs.28,150 towards arrears of cess on rubber was realised at the check post from a manufacturer for transporting rubber without valid licence. Three consignments of rubber were allowed to be transported only after collecting a sum of Rs.15,000/- (Rs.5000/- each) towards security deposit as the documents which accompanied the goods were defective. During the course of road checking a consignment of rubber with false documents was detected, upon which collected a sum of Rs.10,000/- towards penalty. In another instance, a sum of Rs.25,000/- was collected from an unlicensed dealer who was unauthorisedly transporting rubber in a tourist bus from Thrissoor to Bangalore through Walayar Checkpost. Besides, a sum of Rs.18,000/- was collected towards cess on rubber through the Liaison Officer, Bangalore on detection of 4 unauthorised consignments of rubber at the Commercial Tax Checkpost, Hosur near Bangalore. An amount of Rs.1223/- was collected from a dealer at the checkpost being the cess on rubber for transporting latex without obtaining special authorisation from the Board. A complaint was filed before Walayar Police under Crime No.155/92 on detection of attempted transport of two loads of rubber without proper documents, out of which one load of rubber was ordered to be disposed of and the value thereof amounting to Rs.2,35,491.40 was deposited in the Court pending investigation.

Cross checking of monthly returns/N form declarations of 143 dealers & manufacturers with those of their suppliers/purchasers resulted in detecting unaccounted transactions. Action initiated to realise cess involved on the quantities has yielded an amount of Rs.10.88 lakh.

Supply of declaration forms for inter-state transport of rubber.

Form N books numbering 2369 were supplied to various estates, processors, dealers and manufacturers. Copies of 50812 Form N declarations were scrutinised and where discrepancies were noticed, explanations/clarifications were called for. As per the daily statements received from checkposts, Walayar, Manjeswaram and Kavalkinar, 38,583 consignments of rubber had passed through the 3 checkposts during the period under report.

A total of 124695 N forms were issued for inter-state transport of rubber during 1992-93 through all the issuing offices under the Rubber Board.

4 Licensing of dealers

Rule 39 and 39A of Rubber Rules 1955 provides for licensing of rubber dealers and processors. Registration of branches/purchase depot of dealers and processors, registration of agency of rubber dealers, approval of shifting of licensed premises and their trade names, approval of reconstitution of firms, supply of Form 'N' declarations for inter-state transport of rubber and preparation of list of licensed rubber dealers in India are related activities.

The strength of rubber dealers was 7365 at the beginning of 1992-93 which fell to 7135 at the close of the year. At the same time, the number of licensed processors went up to 147 from 142 as on 31-3-1993.

A. Dealers Licence

During the year 1561 dealers licences were issued including 835 new licences. Of these 1229 were for one year with validity upto 31-3-1993 (834 fresh licences and 395 renewal cases), 71 were for a duration of 2 years with validity upto 31-3-1994 and 261 licences for 3 years with validity upto 31-3-1995 (one fresh licence and 260 renewal cases).

In addition 2343 licences were renewed with validity from 1-4-1993. Of these 220 were for the year 1993-94, 56 for the years 1993-95 and 2067 for the years 1993-96. So also, 81 new licences were granted during the month of March 1993 valid for 1993-94.

Statewise Distribution of Dealers and Processors having valid licence during 1992-1993

| Sl. No. | Name of State | No. of dealers | No. of Processors |
|---|---|---|---|
| -1 | Kerala | 6215 | 122 |
| -2 | Tamil Nadu | 192 | 16 |
| -3 | Delhi | 164 | |
| -4 | Punjab | 138 | |
| -5 | West Bengal | 95 | |
| -6 | Uttar Pradesh | 71 | |
| -7 | Maharashtra | 65 | |
| -8 | Karnataka | 61 | 7 |
| -9 | Haryana | 40 | |
| 10 | Gujarat | 25 | |
| 11 | Tripura | 24 | 1 |
| 12 | Madhya Pradesh | 8 | |
| 13 | Rajasthan | 8 | |
| 14 | Chandigarh | 6 | |
| 15 | Andaman and Nicobar | 6 | |
| 16 | Assam | 5 | |
| 17 | Meghalaya | 4 | |
| 18 | Bihar | 3 | |
| 19 | Andhra Pradesh | 2 | 1 |
| 20 | Himachal Pradesh | 1 | |
| 21 | Jammu Kashmir | 1 | |
| 22 | Orissa | 1 | |
| | Total | 7135 | 147 |

B. Suspension/Revocation/Cancellation of Dealers Licence.

During the year 13 licences were suspended on detecting serious irregularities. 2 licences were revoked on violation of the provisions in the Rubber Act and Rubber Rules. However the order of suspension of one licence was later revoked after receiving satisfactory explanation with supporting documentary evidence. Due to death of licensees and on receipt of specific requests 68 valid licences were cancelled.

C. Processors Licence

During the period under report 15 processors licences were granted. Of these 9 were fresh cases. Besides 29 licences were renewed with validity effective from 1-4-1993. Of these 28 licences were for the year 1993-98 and one for the year 1993-94.

A licence of a processor was suspended due to failure to grade and market their product in conformity with BIS specifications. However, the order of suspension was revoked on the basis of their undertaking and assurance with regard to grading and marketing of their product as required under Rule 48 of the Rubber Rules 1955, as amended in 1975.

As on 31-3-1993 there were 147 licensed processors all over the country.

D. Registration of Branches

During the year 406 branches of the dealer and processors were registered. As on 31-3-1993 there were 621 branches of the dealers and processors including the registrations granted during 1991-92. Also registered 224 branches for 1993-94/1993-96.

E. Registration of Agents for dealers and processors

Based on letter of authorisation received from dealers/processors, 416 agencies were registered to purchase rubber on commission basis. As on 31-3-1993, there were 596 registered agents, inclusive of 180 already registered in March 1992 valid for the year 1992-93. For the year 1993-94 224 agencies were also registered in March 1993. Also registered 2 selling agents on the basis of request received from 2 licensed processors.

F. Shifting of Business premises

On the basis of applications received from the dealers changes in 122 place of business/storage were approved.

G. Change in constitution of firm

Changes in the constitution of 22 firms were approved during the period under report.

H. Collection of cess on rubber from Dealers and Forfeiture of Bank Guarantee

An amount of Rs.77,717/- was collected from dealers towards cess on rubber and bank guarantees worth Rs.35,000/- was forfeited for unlawful trade practice/violation of the conditions of the licence issued.

I. Collecting pending returns

Since it was noticed that dealers and processors are not filing statutory returns in time, while inviting application for renewal of licences, they were required to file a declaration regarding submission of returns. Those cases, which are not accompanied by the requisite declarations, were verified at HO and the returns due were called for. Almost all the dealers and processors who were not filing returns in time, came forward to file statutory returns.

J. Receipt of money

During the year under report a sum of Rs.32,28,721.70 was collected towards licence fee, service charge, cess on rubber, cost of Form N declaration etc., break-up of which is given below:

| Sl. No. | Item | Amount Rs. |
|---|---|---|
| -1 | Licence fee of dealers/processors | 10,73,595.00 |
| -2 | Service charge | 20,09,520.00 |
| -3 | Cess on rubber | 77,717.00 |
| -4 | Forfeiture of Bank guarantee | 35,000.00 |
| -5 | Cost of Form N declaration | 28,413.00 |
| -6 | Sale proceeds of manufacturers/ dealers list | 2,260.00 |
| -7 | Sale of waste paper etc. | 602.00 |
| -8 | Guest room rent | 15.00 |
| -9 | Private trunk call charge | 281.80 |
| 10 | Rebate on franking machine | 1,317.90 |
| | | 32,28,721.70 |

K. Rubber Price

The daily market of RMA 4 and ungraded rubber was collected from Kochi market and passed on to Marketing Division for publication in the newspapers.

5 General Statistics

The statutory monthly returns collected from rubber growers, dealers, processors and manufacturers were compiled and analysed every month. The sample studies in small holding sector by field visits were continued with the help of the field staff in order to ascertain the monthly variation in production, stock etc. pertaining to small growers. The data collected from various sources were computed and worked out on monthly basis. These details are presented in tables attached as Part VIII of the report.

Monitored supply, demand and price of rubber periodically and appropriate recommendations were made. During the period under report the Statistics & Import/Export Committee met twice to review the demand and supply of rubber. The Rubber Board which also met twice and inter-alia reviewed the subject.

Continued to furnish relevant information to the various organisations connected with the rubber industry as in the previous periods. The statistical information required for publishing the 'Rubber Statistical News' (monthly) was prepared. This publication covers among other things details of production, consumption, import and stock position of natural, synthetic and reclaimed rubber and price of natural rubber.

Almost all tables of 'Indian Rubber Statistics' Vol.19 have been made up-to-date. In-house computer facilities were used for the purpose.

Materials were prepared for answering Parliament questions and Kerala Legislative Assembly questions pertaining to various aspects of the rubber industry. A comprehensive 'Note on Rubber' was prepared and forwarded to the Government.

The census work of rubber area initiated in March 1988 was continued, for which 297 Enumerators were temporarily appointed at the Regional Office level for carrying out the field work. Data pertaining to 121,575 small holdings were collected during the year. In connection with the IDPAD project study a field survey on small holders' response to market prices, newplanting, replanting, choice of alternative crops etc. was undertaken. The survey was carried out by the enumerators recruited for the census of rubber area during 1992-93, who filled up 4409 questionnaires. The IDFAD survey reports were processed and the results were sent to the ESI, Amsterdam in floppy disc.

Planning

The project study on 'policy formulation and perspectives for the Indian Natural rubber industry in a changing national and international context' initiated at the end of 1990-91 jointly by the Rubber Board and Economic & Social Institute(ESI), Free University, Amsterdam, under the Indo-Dutch Programme on Alternatives in Development (IDPAD) continued during the year.

Various details relating to the rubber industry were collected and supplied to the ESI. Two members of ESI visited India during September 1992 and had detailed discussions on the project. Besides the Rubber Board, the team along with Dy.Director(S&P)visited Delhi, Bombay, Coonoor, Cochin etc. and had joint discussion with ATMA, STC, AIRIA, UPASI, APK etc.

The Annual Plan for 1993-94 was prepared and forwarded to Government. Also furnished a quarterly progress report on Plan Schemes to Government.

Supply of information to world organisations

Continued to supply information to world organisations like the International Rubber Study Group (IRSG) London and the Association of Natural Rubber Producing Countries (ANRPC), Kuala Lumpur. The 34th Assembly of the International Rubber Study Group (IRSG) was held in November 1992 at Singapore. The Chairman, Rubber Board led the Indian delegation at the Assembly. A meeting of senior officials, Executive Committee and a special meeting at Ministerial level were organised by the ANRPC at Chiangmai, Thailand during 24 - 30th April 1992. The Chairman, Rubber Board represented India at the meetings. The 16th Assembly and connected meetings of the ANRPC were held in Kuantan, Malaysia in October 1992. The Chairman and the Vice Chairman, Rubber Board represented India at the Assembly and meetings.

6 Publications and publicity

Circulation of the 'Rubber' Malayalam monthly recorded an average number of 11,100 copies a month during the period under report. The scheme for enrolling life membership was continued and 210 subscribers were enrolled, bringing up the total number under life membership to 4277. Two issues of the Rubber Board Bulletin were brought out, each with 1100 copies. Also brought out leaflets on various aspects of rubber cultivation. The sale of the publications 'Rubber Vithu Muthal Vipani Vare' and 'Rubber Enna Kalpadhenu' was continued. Twelve issues of Rubber Statistical news, each with 600 copies were brought out and sent to subscribers.

The 'Rubber Growers' Companion 1993" was brought out with 6500 copies (Deluxe 250, with text 3500 and without text 2750) along with 1000 copies of the 'Rubber and its cultivation'.

Press releases, Farm features and Advertisements

Press handouts on various topics were released to the national as well as local dailies which secured wide coverage. A total of 56 Press releases and 47 advertisements were issued, apart from 27 farm features to 'Karshikarangam' pages of the Malayalam dailies.

Exhibition

During the period under report, three exhibitions were arranged at Mangalore, Kottayam and Palode.

Broadcasting of Calendar of operations

In association with All India Radio, Thrissur, finalised a programme for broadcasting the Calendar of operations to be followed in rubber plantations in each month. The first of the series went on air on 3rd January 1993.

Other activities

Utilised all channels of communication in popularising the activities of the Board. Both Doordarshan and Akashvani covered important functions and highlighted the achievements in various areas.

7 Labour Welfare

Section 8 of the Rubber Act 1947 states that it shall be the duty of the Board to promote by such measures as it thinks fit for the development of the Rubber Industry. One of such measures by virtue of Sub Section 2(f) is to secure better working conditions and the provisions for the improvement of amenities and incentives to workers.

In compliance with Section 8(2)(f) of the Rubber Act, 1947, the Board implemented seven schemes during the financial year 1992-93, spending Rs.41,04,516.25. The details are as follows:-

I Non-Plan Schemes

(a) Educational Stipend Scheme

The scheme provides for the payment of stipend to children of rubber plantation workers for undertaking courses in Arts, Science, Commerce, Engineering, Agriculture and Medicine. The Stipend consists of tuition fee, hostel/boarding fee and lumpsum grant for the purchase of books, instruments etc. A total number of 10,302 applications were received of which 8875 were paid, 735 were cancelled and 692 were pending for want of compliance of necessary formalities. The amount paid under the scheme was Rs.15,62,325.25. All the eligible cases were paid stipend during the financial year itself.

(b) Medical Attendance Scheme

It provides for reimbursement of medical expenses incurred by workers, and for compensation in lieu of their inability to attend duty on account of illness. The scheme applies only to workers employed in plantations not covered by the Plantation Labour Act 1951. All the applications during the year were processed and eligible cases were paid, amounting to Rs.1,50,816/- to 229 workers.

(c) Group Insurance-cum-Deposit scheme (4 phases)

These scheme provides for payment of compensation to workers employed in estates not covered by the Plantation Labour Act 1951 against death/injuries by accidents besides encouraging a habit of saving among them. First

phase of the scheme was started from 1986-1987, the second phase in 1990-1991, the third in 1991-1992, and the fourth from the financial year 1992-93. Each phase will be in operation for a period of ten years. The total number of workers enrolled by the year was 3,934. An amount of Rs.3,93,400/- was remitted in favour of workers towards Board's share. An amount of Rs.31,412 was paid to 21 workers as accident compensation.

II Plan Scheme

Housing subsidy scheme was implemented as a Plan Scheme during the year. The scheme provides for the payment of housing subsidy amounting to a maximum of Rs.5,000/- per worker for construction of own house. The plinth area and the estimate cost of the house shall not exceed 70 sq.m. and Rs.70,000 respectively. The subsidy is released when the construction reaches lintel level. During the year 1358 applications were received and an amount of Rs.19,97,975 was paid to 402 workers.

8 Internal Audit

The main function of the internal audit is to check whether activities are carried out according to rules and regulations and public funds are incurred properly. During the period under report internal audit/inspection was conducted in 56 offices/units.

Replies to internal audit report from 24 offices were reviewed and settled. Replies to the review report of Attendance Register of offices located at Kottayam were reviewed and objections were settled.

Files/Cases referred for examination numbering 155 on various subjects such as pension, pay fixation, service verification, anomaly rectification, counting of past services etc. were scrutinised with reference to the latest rules and Government orders and endorsements were issued.

Scrutiny was made on monthly returns of vehicles/ fuel consumption aiming at enforcing strict economy in the use of vehicles, consumption of fuel and repairs and periodical review reports/statements were prepared and presented.

Training programme

Two training batches for Junior Assistants and a refresher course for Section Officers/Assistant Section Officers were conducted in July, August 1992 and January 1993 (from 2-7-92 to 23-7-92 and 27-1-93 to 29-1-93 respectively).

Replies to enquiries on audit of the accounts of the Rubber Board for the year 1991-92 were collected and furnished to the Inspection team. Replies to outstanding paras in the inspection reports for the following years were also handed over to the inspection team before the conclusion of the inspection.

| Year | Balance paras outstanding |
|---|---|
| 1979-80 | 2 |
| 1983-84 | 2 |
| 1985-86 | 20 |
| 1986-87 | 8 |
| 1987-88 | 23 |
| 1988-89 | 21 |
| 1989-90 | 51 |
| 1990-91 | 33 |
| | 160 |

On the basis of the replies furnished to the Audit all the outstanding paras of 1979-80 and 1983-84 were dropped. Out of the 160 paras outstanding as on 1-1-1992, the Accountant General had dropped 106 paras.

9 Legal matters

During the year under report timely advice was rendered on 785 files. In 205 applications for House Building Advances, scrutinised documents for determining the eligibility of applicants. Drafted and examined legal documents to be executed. Steps were taken through lawyers to safeguard the interest of the Board in 70 litigations pending in various courts. Parawise comments and necessary instructions were given to Standing Counsels in cases pending in High Courts.

In 12 loan permit cases, the entire decree amounts were realised through Execution Petitions in the court.

In the complaints filed in Consumer Disputes Redressal Forum, the Board's case was presented with evidence/documents. Two complaints were successfully contested and got disposed of in Board's favour.

10 Vigilance

During the year under report took up for enquiry/verification of 23 complaints containing allegations against 8 officers of Group A & B status and 15 employees of Group C & D status. The allegations mainly related to recommendation of subsidy/financial assistance to ineligible growers, dereliction of check post duties resulting in smuggling of rubber and causing financial loss to the Board, tendering of false evidence before the inquiry authority, insubordination and misbehaviour towards senior officers/superiors, negligence and carelessness in driving Board's vehicles causing accidents/financial loss, failure to comply with Board's directions/orders, habitual unauthorised absence etc.

Major penalty proceedings against 10 officials and minor penalty action against 12 officials were initiated during the year under report.

Annual statements of immovable property as on 31-12-1992 were called for from all officers of Group A and B status. The statements were scrutinised.

11 Hindi work

Administrative reports like Annual Reports and Annual Accounts to be placed before the Parliament were prepared bilinqually. Efforts were continued to accelerate the implementation of the Official Language Scheme through the following measures:

Official Language Implementation Committee

Two meetings of the Official Language Implementation Committee were held during the year. Annual programme for the year 1992-93 was prepared. Two meetings of the Hindi Advisory Committee of the Ministry of Commerce were attended.

Hindi Workshop

Twenty Hindi Workshops were conducted in the Regional Officesat Punalur, Adoor, Pathanamthitta, Changanacherry, Kottayam, Kanjirappally, Pala, Erattupetta, Muvattupuzha, Thodupuzha, Kothamangalam, Ernakulam, Thrissur, Nilambur, Palakkad, Kozhikode, Thalasserry, Taliparamba, Kanhangad, and Mangalore. Training in noting and drafting in Hindi, correspondence in Hindi etc, were given at the Workshops. A state level Hindi Workshop was conducted in the VJT Hall, Trivandrum on 17-9-1992. An official language conference was conducted on 12 May 1992.

Hindi Week Celebration

Hindi Week was celebrated from 14th September 1992. Competition in noting and drafting, elocution, translation, quiz, typewriting etc. were conducted and prizes were awarded to the winners. Competition were also conducted for the children of the employees of the Board.

Hindi Bulletin

Five issues of the Hindi Bulletin were published. in the year. Special awards were given to Smt L Thankamma and Dr.Saraswathy Amma, RRII for the best articles published in Rubber Samachar, the Hindi Bulletin.

Purchase of Hindi Books

Hindi books worth Rs.4,000/- were purchased during the year. Hindi novels, epics like Ramayan, Mahabharat etc. little story backs, poems, essays, literatures, dictionaries, glossaries etc. are available in the Hindi Library.

Programme of Hindi teaching/Hindi Typewriting

Hindi classes were conducted in which 60 employees were trained. Of them 42 became eligible for cash award, and special pay was sanctioned to 18 employees. Training in Hindi Typewriting was given to 15 employees. Facilities for learning Hindi through correspondence course were also arranged.

Award from the Ministry

An award was secured by the Board from the Ministry of Commerce for the best service in the implementation of Official Language Policy of the Union.

12 Sub/Liaison Offices

There are 8 Sub Offices in the major consuming centres outside Kerala; at Ahmedabad, Bangalore, Bombay, Calcutta, Jullundar, Kanpur, Madras and New Delhi. These offices assess suitability of applicants to hold licence to deal in rubber or acquire rubber for rubber goods manufacture. The purchases made by the rubber manufacturers and the stock held by the rubber dealers were verified by the offices at random. The books of accounts and records of the licence holders were also verified to ensure that all rubber procured were brought to book for subjecting to assessment of cess. Surprise inspections were also conducted to detect unlicensed dealing in rubber and unlicensed manufacturing of rubber goods in contravention of the provisions of the Rubber Act and Rules.

Technical support was rendered from four of these offices through Junior Rubber Technologists posted there to the rubber manufacturing units in solving their problems in product manufacture. Problems which could not be solved by the local officials were referred to the Department of P & PD at Kottayam for examination and giving suitable advice to the manufacturers.

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## PART VII - FINANCE AND ACCOUNTS

Preparation of Annual budget, Performance budget, Foreign Exchange Budget and budgetary control, maintains the accounts of the Board, preparation of Annual Accounts, places demands for grants from the Government from time to time, collect funds and distribute to various departments, advising financial propriety and regularity of transactions and on matters related to pay, service rules etc. were the major function of Finance and Accounts. Also assisted the Cost Accounts Branch of the Ministry of Finance in ascertaining cost of production and fixing price of Natural Rubber. Prepared financial statements for project reports and schemes. Dealt with Central Income Tax, Agricultural Income Tax and Sales Tax matters relating to the activities of the Board. Data were electronically processed in the field of financial accounting, pay roll and subsidy payment.

### Annual Accounts 1991-92

Statutory Annual Accounts of the Board for the year 1991-92 were prepared and given to AG Kerala within the stipulated time. The Audit Report and the Audited Accounts with the certificate were received from the AG and the same were forwarded to the Ministry.

The income and expenditure account for 1991-92 and a balance sheet as on 31-3-1992 covering an elaborate Schedule of Assets have been drawn up.

### Funds Management

During the financial year 1992-93, funds amounting to Rs.30.59 crore have been received from Government. The internal resources during the year was about Rs.3 crores. The total expenditure of the Board for the year was Rs.32 crores (Provisional). The accumulations in the General Provident Fund and Pension Fund were judiciously invested to maximise the returns. For the year 1992-93, the Board could declare interest on the GPF accumulations of the employees at 13% p.a. as against 12% p.a. during the previous year.

### Revised Estimate 1992-93 and Budget Estimate 1993-94

The Revised Budget for 1992-93 and Budget Estimate for 1993-94 were prepared within the stipulated time and forwarded to the Government. Budget sanctioned for the year 1992-93 both Plan and Non-Plan put together, was Rs.32.89 crore. As against this, budget sanctioned for 1993-94 is Rs.49.98 crore including provision for implementation of World Bank Scheme for Rubber Plantation Development.

F&A Division of Administration Department

In addition to the routine functions/activities like preparation of pay bill, processing of personal claims, processing of payments and receipts of interest bearing advances etc., PF Account numbering about 2100 and payment of pension to 186 pensioners were attended. Centralised payment of Life Insurance Premium, Savings Linked Group Insurance, Income Tax and disbursement of subsidies to rubber plantation workers were also carried out.

Cost Accounts

Continued to collect cost data for furnishing to the Government and to ANRPC. Cost of raising rubber plantation in one hectare in different regions has been updated. Assisted the Cost Accounts Branch of the Ministry of Finance by furnishing details during December 1992 in the quick desk study for fixing benchmark price of RMA IV grade rubber. Conducted study of cost of production of planting materials in the Board's nurseries for fixing the selling price.

Project Reports in respect of large scale plantations in Tripura, in Karnataka and in tribal land in Kerala were prepared.

Electronic Data Processing

Processed pay roll of over 1000 employees and handled the financial accounting for the year. The Asset Register of the Rubber Board and the balance sheet as on 31-3-1992 have been processed. Financial statements for 27 project reports have been prepared during the year. For the purpose of Revised Budget, Nominal Rolls and for the purpose of payment of pension arrears, bank-wise statement of pensioners were prepared.

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# PART - VIII

## STATISTICAL TABLES

Table - 1

PRODUCTION, IMPORT AND CONSUMPTION OF NATURAL RUBBER

(Tonnes)

| Month | | Production | Import[p] | Consumption (indigenous & imported) |
|---|---|---|---|---|
| April | 1992 | 26,520 | 1,546 | 33,250 |
| May | " | 31,630 | 1,652 | 32,150 |
| June | " | 22,880 | 1,942 | 33,115 |
| July | " | 23,835 | 2,206 | 33,795 |
| August | " | 26,815 | 1,985 | 33,995 |
| September | " | 34,980 | 2,699 | 33,450 |
| October | " | 39,695 | 2,163 | 34,280 |
| November | " | 45,100 | 619 | 35,585 |
| December | " | 54,240 | 773 | 35,920 |
| January | 1993 | 44,805 | 530 | 36,780 |
| February | " | 20,550 | 257 | 35,565 |
| March | " | 22,440 | 126 | 36,220 |
| TOTAL | | 393,490 | 16,498 | 414,105 |

p - provisional

Table - 2

STOCK OF NATURAL RUBBER AT THE END OF EACH MONTH

(Tonnes)

| Month | | Growers & Dealers | Manufacturers | STC | Total (rounded) |
|---|---|---|---|---|---|
| April | 1992 | 24,140 | 22,785 | 24,919 | 71,845 |
| May | " | 27,990 | 23,780 | 21,199 | 72,970 |
| June | " | 26,695 | 26,550 | 9,605 | 62,850 |
| July | " | 26,340 | 25,340 | 3,414 | 55,095 |
| August | " | 27,490 | 20,710 | 1,699 | 49,900 |
| September | " | 34,430 | 19,040 | 659 | 54,130 |
| October | " | 41,885 | 19,340 | 486 | 61,710 |
| November | " | 48,990 | 22,370 | 486 | 71,845 |
| December | " | 66,160 | 24,290 | 486 | 90,935 |
| January | 1993 | 74,205 | 24,735 | 486 | 99,425 |
| February | " | 58,605 | 25,575 | 486 | 84,665 |
| March | " | 42,930 | 27,725 | 486 | 71,140 |

Table - 3

PRODUCTION, IMPORT AND CONSUMPTION OF SYNTHETIC RUBBER

(Tonnes)

| Month | | Production | Import[p] | Consumption |
|---|---|---|---|---|
| April | 1992 | 4,139 | 3,660 | 9,065 |
| May | " | 4,637 | 3,866 | 8,600 |
| June | " | 3,939 | 4,033 | 8,565 |
| July | " | 3,184 | 4,576 | 9,130 |
| August | " | 4,847 | 4,029 | 9,095 |
| September | " | 5,067 | 4,656 | 8,955 |
| October | " | 5,223 | 3,505 | 8,870 |
| November | " | 1,724 | 4,200 | 9,160 |
| December | " | 4,057 | 4,065 | 8,960 |
| January | 1993 | 4,679 | 3,863 | 9,080 |
| February | " | 5,169 | 4,655 | 8,920 |
| March | " | 5,126 | 5,010 | 9,040 |
| TOTAL | | 58,136* | 50,118 | 107,440 |

p - provisional

* - Including a quantity of 6345 tonnes, for which monthwise break up is not available.

Table - 4

PRODUCTION & CONSUMPTION OF RECLAIMED RUBBER

(Tonnes)

| Month | | Production* | Consumption |
|---|---|---|---|
| April | 1992 | 4,840 | 4,930 |
| May | " | 4,690 | 4,845 |
| June | " | 4,970 | 5,075 |
| July | " | 5,020 | 5,170 |
| August | " | 5,190 | 5,285 |
| September | " | 5,205 | 5,335 |
| October | " | 5,415 | 5,490 |
| November | " | 5,260 | 5,570 |
| December | " | 5,255 | 5,205 |
| January | 1993 | 5,300 | 5,460 |
| February | " | 5,265 | 5,150 |
| March | " | 5,080 | 4,955 |
| TOTAL | | 61,490 | 62,470 |

* Indigenous purchase by manufacturers.

ANNEXURE-1

LIST OF MEMBERS OF THE RUBBER BOARD AS ON 31-03-1993

| | | |
|---|---|---|
| -1 | Smt J Lalithambika, IAS | : Chairman, Rubber Board |
| -2 | The Agricultural Production Commissioner, Kerala, Trivandrum-695 001 | Nominated by the Govt. of Kerala to represent that State. |
| -3 | The Chairman, Plantation Corporation of Kerala Ltd., Kottayam-686 004, Kerala. | |
| -4 | The Chairman Arasu Rubber Corporation Ltd Vadassery, Nagercoil Tamil Nadu | Nominated by the Govt. of Tamil Nadu to represent them. |
| -5 | Sri PK Abdullakutty Managing Director KMA Estate & Timbers Pallikkandy Road Kallai, Kozhikode-673 003. | Elected by the Large growers in the State of Kerala. |
| -6 | Michael A Kallivayalil Kuttikkanam PO Peermade Idukki Dist., Kerala | |
| -7 | Sri K Jacob Thomas Managing Director Vaniampara Rubber Co.Ltd. Vazhakkala Buildings Kottayam - 686 001, Kerala. | |
| -8 | Sri A Kurian Ooppoottil Parvathipuram Nagercoil | Elected by large growers in the State of Tamil Nadu |
| -9 | Sri Dwaraka Nath Das, MP 187 South Avenue New Delhi | Elected by the Lok Sabha |
| 10 | Sri Ramesh Chennithala, MP 14, Teen Murthi Lane New Delhi | |
| 11 | Sri Nyndek Yonggam, MP 66 South Avenue New Delhi-110 011 | Elected by Rajya Sabha |
| 12 | Sri KJ Sohan Ex-Mayor, Cochin Corporation, (11/307 Thekke Thamaraparambu Fort Kochi) Ernakulam. | |
| 13 | Sri Charupara Ravi, Vasantha Vilasam Vithura, Nedumangad Trivandrum | |
| 14 | Shri A Kunheeran General Secretary, Kerala State Plantation Workers Federation, Kondotty PO Malappuram. | Nominated by the Central Government to represent Labour. |
| 15 | Sri RS Unni, UTUC Office Curzon Road, Kollam-13. | |

| | | |
|---|---|---|
| 16 | Sri PK Narayanan<br>Rubber Production Commissioner<br>Rubber Board, Sastri Road<br>Kottayam-686 001 | (Ex-officio) |
| 17 | Sri K Joseph Monippally<br>General Secretary<br>Indian Rubber Growers Association, 7/508 A, Mavelipuram Housing Colony, Kakkanad, Cochin-682 030, Kerala. | Nominated by the Central Government to represent small growers of Kerala |
| 18 | Sri MK Vidyadharan<br>Uthamam, LIC Lane<br>Pattom Palace PO<br>Trivandrum-695 004 | |
| 19 | Sri M Assainarkutty<br>Malickandath<br>Chapparappadavu<br>Via, Taliparamba<br>Cannanore Dist., Kerala | |
| 20 | President,<br>All India Rubber Industries Association<br>Navjivan Society Bldg.,<br>No.3, 9th Floor<br>Lamington Road<br>Bombay-400 008. | Nominated by the Central Government to represent rubber goods manufacturers |
| 21 | President<br>Automotive Tyre Manufacturers Association<br>PHD House<br>Opp: Asian Games Village<br>Siri Fort Industrial Area<br>New Delhi-110 016 | |
| 22 | Sri Gagan Behari Jena<br>Village Rampur<br>PO Ramchandrapur<br>Cuttack, Orissa | |
| 23 | Sri NJ Mathew<br>Nambiaparambil<br>Advocate, Thodupuzha | Nominated by the Central Government to represent 'Other interests' |
| 24 | Sri RG Ketkar<br>34, Mysore Colony<br>Bombay - 400 074 | |
| 25 | Prof. KR Raman Kartha<br>Kuthiathode<br>Alleppey | |

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| 10 | Sri Ramesh Chennithala, MP 14, Teen Murthi Lane New Delhi | |
| 11 | Sri Nyodek Yonggam, MP 66 South Avenue New Delhi-110 011 | Elected by Rajya Sabha |
| 12 | Sri KJ Sohan Ex-Mayor, Cochin Corporation, (11/307 Thekke Thamaraparambu Fort Kochi) Ernakulam. | |
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| | | |
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| 19 | Sri M Assainarkutty<br>Malickandath<br>Chapparappadavu<br>Via, Taliparamba<br>Cannanore Dist., Kerala | |
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| 22 | Sri Gagan Behari Jena<br>Village Rampur<br>PO Ramchandrapur<br>Cuttack, Orissa | |
| 23 | Sri NJ Mathew<br>Nambiaparambil<br>Advocate, Thodupuzha | Nominated by the Central Government to represent 'Other interests' |
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Item No. 28/11/94 124th

# ANNUAL REPORT OF THE RUBBER BOARD FOR THE YEAR 1993-'94

THE RUBBER BOARD
[Govt. of India, Ministry of Commerce]

KOTTAYAM-686-001
KERALA STATE

Item No.

124th Boa

# ANNUAL REPORT OF THE RUBBER BOARD FOR THE YEAR 1993-'94

THE RUBBER BOARD
[Govt. of India, Ministry of Commerce]

KOTTAYAM-686-001
KERALA STATE

THE RUBBER BOARD

Annual Report on the activities for the year 1993-94



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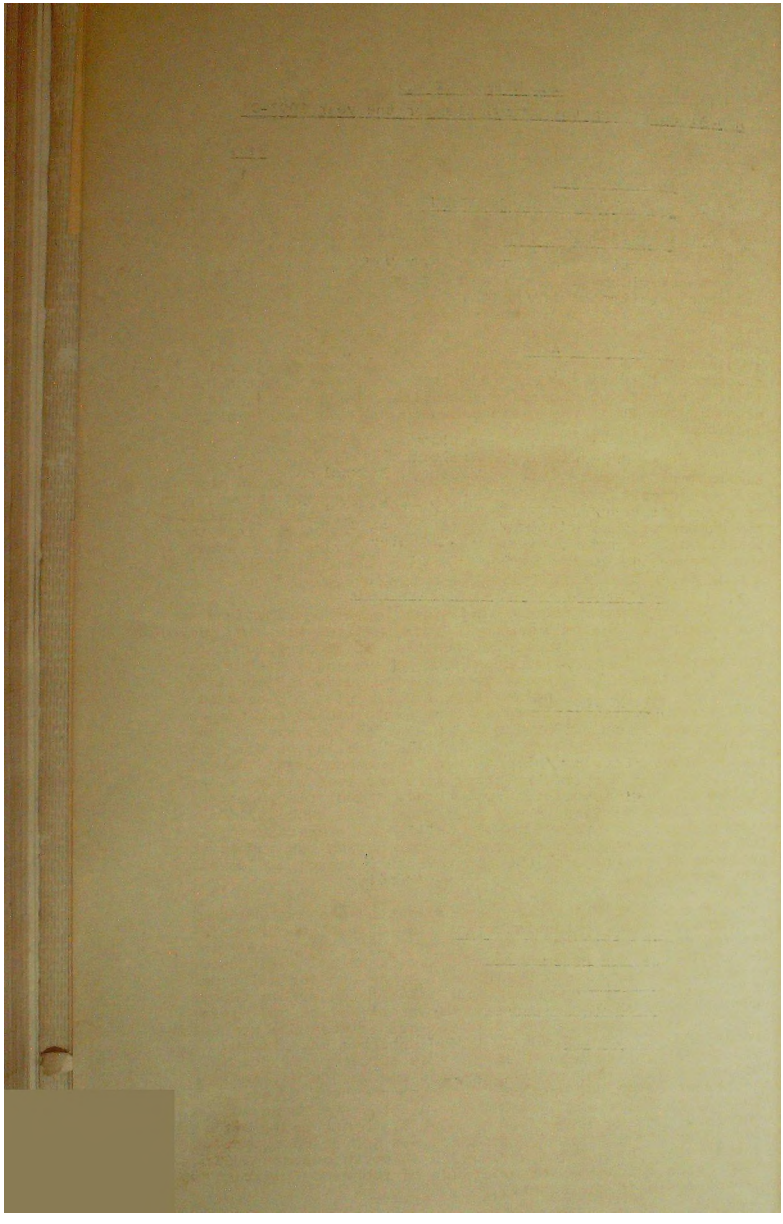

# ANNUAL REPORT FOR THE WORKING OF THE RUBBER BOARD FOR 1993-94

## PART - I : INTRODUCTION

This is the annual report of the Rubber Board on its working for the year 1993-94, containing a summary of the activities from 1st April, 1993 to 31st March, 1994.

Rubber plays an important role in the industrial and economic development of the country. Cultivation of rubber was introduced to the country during the first decade of this century. Large planters were the pioneers. Small holders made their appearance later. The Government of India constituted the Rubber Board as a body corporate primarily to promote natural rubber production under the Rubber Act, 1947. In order to undertake scientific, technological and economic research, the Board established the Rubber Research Institute of India in 1955.

India had to evolve suitable package of practices for development of the rubber plantations. With sustained research and development activities coupled with extension and advisory services for transfer of technology to the planters' fields, the rubber producing sector had a quick change-over from the traditional methods to modern cultivation practices. India soon became the fourth largest natural rubber producer in the world, after Thailand, Indonesia and Malaysia.

The research efforts made significant contributions to the rubber plantation industry. India evolved the high yielding clone RRII 105 with yield potential of about 2500 kg per hectare. Switchover from seedlings to buddings, tissue culture techniques for propagation evolving suitable fertilizer schedules for mature and immature rubber, pest and disease management practices, improved crop exploitation techniques and improved crop processing had played a vital role in enhancing rubber production and upgrading quality of the proceseed rubber. Growing the crop with leguminous ground cover, application of fertilizers after soil and leaf analysis, crop exploitation in association with yield stimulation, processing technically specified rubber and process aid rubbers, consumption research to improve the technological properties of rubber, development of solar dryer for curing raw rubber etc. are some of the current thrust areas in research and development activities.

The Rubber Plantation Development Scheme implemented from the VI Plan period is by far the largest scheme operated for development and promotion of rubber cultivation in the country. The scheme provides for financial assistance to small growers in the traditional areas and for all types of growers in the non-traditional areas to undertake rubber cultivation. Input subsidy and technical advice and assistance at all stages of the planting and maintenance are extended in addition. A total of 72,670 hectares was planted during the VI Plan period against the target of 60,000 ha. During the VII Plan, the achievement was 74,364 ha. against the target of 40,000 hectares. During the next 3 years, 1990-91, 1991-92, and 1992-93, area planted was about 40,000 hectares. During 1993-94 only about 8,725 ha. could be planted up since terrorist violence was hampering extension of the rubber plantation activities in north eastern India which holds out scope for extension of rubber cultivation on a large scale in the country.

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Performance during 1993-94

The overall performance of the rubber plantation industry during 1993-94 has been impressive. Production of natural rubber increased to 435,160 tonnes from 393,490 tonnes, recording a growth rate of 10.6%.

The consumption of natural rubber during the year increased by 8.8% to 450,480 tonnes recording almost an identical growth rate of 8.9% of 1992-93.

Price

During the year, the monthly average price of rubber fluctuated between Rs.2410/- and Rs.2688/- per quintal for RMA IV grade. The average price during the year was Rs.2496/- as against Rs.2550/- in the previous year. A quantity of 186 tonnes of different grades of natural rubber was exported during November 1993 to March 1994. In February,1994, the Government of India revised the benchmark price of rubber as Rs.24.90 for RMA IV and as Rs.24.40 for RMA V grade per quintal.

## PART - II

## CONSTITUTION AND FUNCTIONS

1) INTRODUCTION

The Indian Rubber Board was constituted under the Rubber (Promotion and Marketing) Act,1947 which came into force on 19th April 1947 'to promote by such measures as it thinks fit' the development of the rubber industry in India. The Rubber Production and Marketing (Amendment) Act of 1954 made certain changes in the constitution of the Board and its name was changed changed as Rubber Board. This Act came into force on 1st August,1955. The Rubber Act was further amended by the Rubber (Amendment) Act,1960 and by the Rubber (Amendment) Act, 1982. The amendment in 1982 was made by the Government to appoint a part time/whole time Chairman for the Board and an Executive Director on whole time basis (if considered necessary)

2) CONSTITUTION

The Rubber Board functions under the Ministry of Commerce, of the Government of India. The Board has at present a full time Chairman as principal executive, responsible for implementing its decisions and for discharging the duties under the Rubber Act. There are 25 other members consisting of -

a) Two members to represent the State of Tamilnadu, one of whom shall be a person representing the rubber producing interests;

b) Eight members to represent the State of Kerala, six of whom shall be representing the rubber producing interests, three of such being persons representing the small growers;

c) Ten members to be nominated by the Central Govt. of whom two shall represent the manufacturers and four labour;

....3/

d) Three members of Parliament of whom two shall be elected by the Lok Sabha and one by the Rajya Sabha;

e) The Executive Director (ex-officio); and,

f) The Rubber Production Commissioner (ex-officio).

The position of Executive Director has not been filled up so far.

List of the members of the Board as on 31.3.1994 is given at the end of this report.

One of the members is elected as Vice-Chairman. Seven committees have been formed to review the Board's existing programmes vis-a-vis the functions as laid down under section 8 of the Rubber Act, to examine proposals for development of natural rubber industry and to make suitable recommendations to the Board. The Committees are Executive Committee, Research and Development Committee, Market Development Committee, Planting Committee, Statistics and Import/Export Committee, Labour Welfare Committee and Staff Affairs Committee.

Smt J Lalithambika IAS continued to be the Chairman of the Board.

Sri Charupara Ravi, member representing labour had been elected as Vice-Chairman during the third and last year of the Board's term from 29.12.92 to 12.8.93. Orders reconstituting the Board were issued by the Central Govt. on 21.1.1994.

FUNCTIONS

The functions of the Board according to Section 8 of the Rubber Act are -

i) Promote by such measures as it thinks fit the development of the rubber industry, the measures may provide for -

a) undertaking, assisting or encouraging scientific, technological and economic research;

b) training students in improved methods of planting, cultivation, manuring and spraying;

c) supply of technical advice to rubber growers;

d) improving the marketing of rubber;

e) collection of statistics from owners of estates, dealers and manufacturers;

f) securing better working conditions and the provisions and improvement of amenities and incentives for workers; and

g) carrying out any other duties which may be vested with the Board.

ii) It shall also be the duty of the Board -

a) to advise the Central Government on all matters relating to the development of the rubber industry, including the import and export of rubber;

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b) to advise the Central Government with regard to participation in any international conference or scheme relating to rubber;

c) to submit to the Central Government and such other authorities as may be prescribed half yearly reports on its activities and the working of the Act; and

d) to prepare and furnish such other reports relating to the rubber industry as may be required by the Central Government from time to time.

4) MEETINGS OF THE BOARD AND ITS COMMITTEES

The following meetings of the Board and of the Committees were held during the year;

| | | |
|---|---|---|
| a) Board Meetings | : | On 2 occasions; the 121st meeting on 14.5.1993 and the 122nd meeting on 10.8.1993. |
| b) Committee Meetings | | |
| Executive Committee | : | 30.04.1993 & 03.08.1993 |
| Statistics & Import/ Export Committee | : | 29.07.1993 |
| Staff Affairs Committee | : | 28.04.1993 |
| Market Development Committee | : | 21.04.1993 |
| Planting Committee | : | 22.04.1993 |
| Labour Welfare Committee | : | 02.06.1993 |
| Research & Development Committee | : | 28.06.1993 |

5) ORGANISATIONAL SET UP

The activities of the Rubber Board were carried out by seven departments, viz. Administration, Rubber Production, Rubber Research, Processing and Product Development, Statistics & Planning, Training and Finance & Accounts; headed respectively by the Secretary, the Rubber Production Commissioner, the Director of Research, the Director (P&PD), the Jt.Director(S&P) the Director (Training) and the Director (Finance).

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The headquarters of the Board alongwith the Administration, Rubber Production and Finance and Accounts Departments remained located at the Kottayam Public Library Buildings, Sastri Road, Kottayam-686 001. There are eight Sub/Liaison offices under the Administration Department. The Rubber Production Department has 3 Zonal offices, 2 Nucleus Rubber Estate & Training Centres, 6 Supervisory offices, 41 Regional Offices, 160 Field offices, 16 Regional Nurseries and 27 Tappers' Training Schools located at different rubber growing regions.

The Research Department, the Training Department and the Department of Processing and Product Development functioned in the Board's own buildings at Kottayam-9. The Research Department runs two Regional Research Stations in Kerala, one each in Tamil Nadu, Karnataka, Maharashtra (Dapchari), Orissa, West Bengal, Assam, Mizoram, Meghalaya and Tripura. The Pilot Crumb Rubber Factory located at Kottayam and the Pilot Latex Processing factory located at the Central Experiment Station of the Board at Chethackal were run by the Department of Processing and Product Development which has also established a pilot plant for Radiation Vulcanisation of Natural Rubber.

The Chairman exercises administrative control over all the departments and offices. The total officers and staff under the Board as on 31.03.1994 were 2033; 195 under Group 'A', 551 under Group 'B', 1144 under Group 'C' and 142 under Group 'D'. Very cordial relations existed between the staff and the executive personnel. Their good work has resulted in the impressive record of achievement during the year.

The activities of the different departments are summarised in the following pages: -

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## III. RUBBER PRODUCTION

### FUNCTIONS

The following main functions were executed during the year to promote natural rubber production in the country:

i) Registration of rubber estates.

ii) Planning, formulation and implementation of schemes for expansion, development and modernisation of rubber plantations.

iii) Rendering advisory and extension services.

iv) Production, procurement and distribution of high yielding planting materials.

v) Facilitating distribution of agro-inputs requiring popularisation.

vi) Training of tappers.

vii) Demonstration and training in scientific planting and production of rubber in nontraditional rubber growing areas.

viii) Insurance of rubber plantations.

### REVIEW OF ACTIVITIES

#### 1. REGISTRATION OF ESTATES:

This is a statutory function enjoined on the Board by the Rubber Act 1947.

During 1993-94, a total number of 413 plantations were newly registered extending to 500 ha. Areas removed from records through cancellation of registration covered 841.65 ha. The total area progressively registered as on 31.3.94 was 320795 ha. and total registered units numbered 269770. A large number of units and extensive areas remain to be registered. Registration is now granted only to large rubber growers and to those small growers who insist for it.

#### 2. RUBBER PLANTATION DEVELOPMENT SCHEME PHASE I

This scheme aimed at integrated promotion of newplanting and replanting of rubber, replaced all the earlier planting subsidy schemes. The target set out was 12,000 ha.per year for 5 years, 1980-81 to 1984-85.

The following incentives were offered for both replanting and newplanting of rubber.

i) Capital subsidy of Rs.5,000/-per ha. to growers owning upto 20ha. including any area planted under the scheme and Rs.3,000/- per ha. to growers owning more than 20 ha.

ii) Input subsidy to the weaker sections of growers possessing not more than 6 ha. of rubber for using approved planting materials and approved fertiliser and a subsidy of Rs.150/-per ha. for undertaking soil conservation work.

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iii) The beneficiaries could avail of long term agricultural credit from banks under NABARL'S refinancing scheme to supplement the assistance from the Board. The maximum credit per ha.was limited to Rs.15,020/-, Rs.17,000/- and Rs.18,700/- respectively for growers owning upto 6 ha. of rubber, above 6 ha. and upto 20 ha. of rubber and above 20 ha.of rubber. The loan advanced in 7 annual instalments was repayable in 5 instalments from the 10th to the 14th years of planting. The interest accrued upto the 7th yearwas payable during the 8th and 9th years. During the repayment period only the current interest was payable.

iv) The rate of interest on loans was 12%. The Board subsidised 3% interest to all categories of growers upto the 10th year of planting subject to limitations on the quantum of loans.

v) Free advisory and extension support at all stages of planting and maintenance.

The cumulative progress of the scheme as on 31.3.94 is summarised below:

| | Years to which planting related | | | | | Total |
|---|---|---|---|---|---|---|
| | 1980 | 1981 | 1982 | 1983 | 1984 | |
| No.of subsidy permits issued. | 17,554 | 19,161 | 18,973 | 21,563 | 25,517 | 102,768 |
| Area covered by permits in ha. | 12,123 | 13,605 | 13,875 | 15,580 | 17,555 | 72,738 |

During the year under review, an amount of Rs.849,553.10 was disbursed as subsidy. Total disbursement towards subsidy since the inception of the scheme came to Rs.39,96,34,755.53 as on 31.3.94. An amount of Rs.25.08 lakh has been disbursed as interest subsidy during 1993-94.

3. RUBBER PLANTATION DEVELOPMENT SCHEME PHASE II

The Rubber Plantation Development Scheme Phase II was implemented from 1985 onwards for a period of 5 years. The target under Phase II Scheme was only 40,000 ha. in view of resource constraints.

The assistance offered under phase II scheme were the following.

i) Capital subsidy at the rate of Rs.5000/- per ha. for growers owning upto 5 ha.of rubber in traditional areas and for all categories in the non traditional areas.

ii) Input subsidy for the use of high yielding planting materials of advanced growth (polybagged plants) is granted at the rate of Rs.6/-per plant subject to a maximum of 450 plants per ha. Growers in the traditional region having more than 5 ha. of rubber and carrying out planting under the schemes were also eligible to receive this assistance.

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iii) The beneficiaries could avail of bank loans under the agricultural refinance scheme of NABARD. The loans were advanced in 7 annual instalments and were repayable in 5 annual instalments from the 10th year of planting with a moratorium on paymentof interest till the 7th year. The interest accrued upto the close of the 7th year was payable during the 8th and 9th year.

iv) The normal rate of interest for the loan was 12.5% per annum. The Board subsidised 3% of the interest from the first to the 9th year to those eligible for the capital subsidy.

v) Free advisory and extension support at all stages of planting maintenance, tapping and processing of the crop.

The cumulative progress of the scheme as on 31.3.94 is summarised below:-

| | Years to which planting related | | | | | |
|---|---|---|---|---|---|---|
| | 1985 | 1986 | 1987 | 1988 | 1989 | Total |
| No.of subsidy permits issued | 23,487 | 21,642 | 22,555 | 23,893 | 23,131 | 1,14,740 |
| Area covered by permits in ha. | 15,416 | 14,728 | 15,860 | 15,925 | 15,218 | 77,147 |

During the year 1993-94 a sum of Rs.2,04,49,466.20 had been paid as subsidy. The total disbursement of the subsidy since inception of the scheme amounted to Rs.40,59,96,498.05. An amount of Rs.1.19 crore has been disbursed as interest subsidy during 1993-94.

4. RPI SCHEME PHASE III

Due to delay in approval of the 8th Five Year Plan proposals, the Board was not able to formulate Phase III of the RPI Scheme. However, annual plans within a broad framework of VII th plan proposals were approved and budget provisions were also granted. The Board tentatively implemented the phase III for 1990-91, 1991-92 and 1992-93 as annual schemes on the same lines as for the Phase II scheme.

The progress in implementation is summarised below:

| | Years to which planting related | | | |
|---|---|---|---|---|
| | 1990 | 1991 | 1992 | Total |
| 1. No.of applications received | 32,072 | 33,500 | 30,456 | 96,028 |
| 2. No;of cases in which planting had report-edly materialised. | 32,070 | 33,494 | 30,456 | 96,020 |
| 3. No.of cases inspected in the field | 31,499 | 32,740 | 29,269 | 93,508 |
| 4. Balance pending for inspection | 571 | 754 | 1,187 | 2,512 |
| 5. No.of reports due from inspecting staff | 46 | 191 | 234 | 471 |
| 6. Permits issued | 22,769 | 25,260 | 20,684 | 68,713 |

| | | | | |
|---|---|---|---|---|
| 7. No.of cases rejected/ withdrawn | 5,349 | 3,774 | 3,503 | 12,626 |
| 8. Area covered by permits | 14,406 | 15,250 | 13,043 | 42,699 |
| 9. Applications pending for disposal | 3,952 | 4,460 | 6,269 | 14,681 |

During the year 1993-94 an amount of Rs.4,16,61,617.53 was disbursed as subsidy. The total amount of subsidy disbursed since the inception of the scheme comes to Rs.15,55,02,249.53 as on 31.3.94. An amount of Rs.53.89 lakh has been disbursed as interest subsidy during 1993-94.

5. RPL SCHEME PHASE IV

This is successor to Phase III being implemented from 1993 onwards. The physical target for the plan period is 83,000 hectares, of which 70,000 ha.is a World Bank Assisted Project. The scheme envisages replanting of uneconomic rubber in 40,000/- hectares in traditional areas and / in 30,000 ha including 7,000 ha.in non traditional areas and the rest 13,000 ha. is proposed in non-traditional areas where the World Bank Assisted Project is not in operation.

New planting

Assistance offered under the Phase IV scheme is at the following scale.

1. Capital subsidy @ 8,000/- per ha. limited to 2.00 ha. for planters whose total rubber area does not exceed 5 ha.in traditional areas. All growers in non-traditional areas are eligibl for subsidy for planting up 5 hectares of rubber.

2. Input subsidy at a declining rate of Rs.350/- in the first year, Rs.250/-in the second year, Rs.170/-in the third year, Rs.90/- in the fourth year and Rs.20/- in the fifth year.

3. Input subsidy for the use of high yielding planting materials of advanced growth (polybag plants) is also granted to a maximum of Rs.3000/- per ha. for general category growers and Rs.4000/-per ha.for SC/ST growers. This facility is available to all growers in traditional as well as non-traditional areas including those not eligible for capital subsidy.

4. The beneficiaries could avail themselves of the bank loans under the agricultural refinancing scheme of NABARD, under the existing interest rate. The 3% interest subsidy on loan hitherto has been withdrawn.

Plantation insurance is made obligatory on the part of the beneficiaries during the immaturity period. The premium of Rs.500/- per hectare will be recovered from the first instalment of subsidy. It is optional on the part of the growers owning more than 5.00 ha.of total rubber area.

Progress of implementation is summarised below.

| | New Planting | Re-Planting | TOTAL |
|---|---|---|---|
| 1. No.of applications received. | 18,423 | 5,103 | 23,526 |
| 2. No.of cases requiring inspection. | | | 23,526 |
| 3. No.of cases inspected | | | 21,189 |

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| | | | |
|---|---|---|---|
| 4. Balance pending for inspection. | | | 2,337 |
| 5. No.of reports due from inspecting staff. | | | 660 |
| 6. No.of permits issued | 10,113 | 2,720 | 12,833 |
| 7. No.of cases rejected/ withdrawn | | | 2,358 |
| 8. Area covered by permit | 5,282 | 3,444 | 8,726 |

During the year 1993-94, an amount of Rs.4,12,15,586/- was disbursed as subsicy.

## 6. INSURANCE FOR RUBBER PLANTATIONS

The insurance Scheme drawn up in collaboration with the public sector National Insurance Company Ltd. and launched during 1988-89 was continued during the year under review. As arranged with the Insurance Company, the Insurer, the Board takes out a Master Policy in advance and arranges to issue thereunder policy certificates to individual rubber growers who desire to obtain insurance cover for their rubber plantations and make due remittance of premium amounts to the Board. Claims are investigated in the field by Board's field personnel and reports are furnished to the Insurer. The latter in turn settles admitted claims through the Board. Thus, as the Board undertakes and discharges bulk of the administrative work, the Insurer is enabled to keep down premium rates and to effect claim settlement quickly and effectively.

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The perils covered are fire, fire resulting from explosion, lightning, bush fire and forest fire, wind, storm, tempest, hurricane, landslide, hailstorm, rockslide and subsidence. The scheme covers all immature plantations under the Rubber Plantation Development scheme as well as all mature plantations upto 22 years of age.

The rate of premium for immature areas is Rs.500/- per ha., irrespective of the year of planting to cover immaturity period of 1 to 8 years or part thereof and Rs.473/- for mature areas to cover a three year consecutive period.

The maximum liability of the insurer for plantations in the age group of 1 to 8 years is Rs.45,000/- per ha. and Rs.60,000/- per ha. for mature trees. No salvage value of trees destroyed is deducted from the amount of compensation. Claims can be admitted after an initial waiting in period of one year for newly planted rubber and 30 days for established plantations. The insured grower has to bear 10% of the loss in the case of immature rubber and 10% or Rs.1,000/- whichever is more in the case of mature rubber.

As on 31/3/94, the Board had obtained two master policies covering 19208.79 ha. of immature area and 4450 ha. of mature area. Premium amount paid for the master Policy for the immature area is Rs.90 lakh and the amount paid in 1993-94 is Rs.49 lakh. Premium paid for Master Policy for mature area is Rs.21,04,850/- to cover an area of 4450 ha. and the amount paid in 1993-94 is Rs.10,40,600/-. Amount recovered against issue of policy/certificates to individual growers for mature area is Rs.12,93,502/- including current recovery of Rs.6,575/- and immature area is Rs.81.72 lakh including current recovery of Rs.35,43,740/- to cover a total immature area of 13,812.53 ha. and 2,654.53 ha. of mature area .

Compensation paid since the inception of the scheme is Rs.30,52,034.30 to 1046 certificate holders as at the close of the year. The current year payment is Rs.8,98,153/- covering 404 nos. of policy holders.

Tribal Rubber Development Project/Tribal Rubber Development Scheme

The Board is implementing Tribal Rubber Development Projects in Thiruvananthapuram, Kollam and Idukki Districts sponsored by the Govt. of Kerala. The project is funded by the State Govt. and managed by the Rubber Board. Planting of 159 hectares has been completed in Thiruvananthapuram District, 100 ha. in Kollam District and 104 hectares in Idukki District. In addition, the Board is implementing Tribal Rubber Development schemes directly funded by the Board under Tribal Sub Plan and Special Component Plan. Planting of 40 ha. each under the scheme has been completed in Idukki as well as in Kottayam Districts upto 1993-94.

7. Production and distribution of planting materials:

It is customary for the Board to publish every year a list of planting materials approved for planting based on yield potential and secondary characters. During the year 1993-94 also the list was published.

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To ensure the easy availability of budgrafted plants of the recommended clones at reasonable price, the Board continued to maintain rubber nurseries in all important rubber growing centres. The details of the nurseries are given below:

| | Kerala | Total extent in ha. | Region |
|---|---|---|---|
| 1. CN | Karikkattoor | 20.23 | Kottayam |
| 2. RN | Kadackamon | 4.04 | Punalur |
| 3. RN | Perumpulickal | 4.00 | Adoor |
| 4. RN | Kanhikulam | 4.88 | Palakkad |
| 5. RN | Ulickal | 5.20 | Talasserry |
| 6. RN | Manjeri | 2.00 | Nilambur |
| 7. RN | Peruvannamoozhy | 3.60 | Kozhikode |
| 8. RN | Alakode | 3.41 | Taliparamba |
| | Total | 47.36 | |
| | Non traditional areas | | |
| 1. RN | RRDS (NRETC) | 1.85 | South Andamans |
| 2. RN | Devarappally | 2.00 | Andhra Pradesh |
| 3. RN | Darrangiri | 10.62 | Guwahati, Assam |
| 4. RN | Mijungdisha | 14.00 | Diphu, Assam |
| 5. RN | Balacherra | 13.00 | Silchar, Assam |
| 6. RN | Hillara | 14.32 | Silchar, Assam |
| 7. RN | Jchgitchikgre (DDC) | 3.60 | RTura, Meghalaya |
| 8. RN | Tulakona (NRETC) | 3.50 | Agartala, Tripura |
| | Total | 62.89 | |

Production and distribution of planting materials in 1993:

Consequent on the change over to the polybagged technique of planting, the entire quantity of plants raised in Board's nurseries could not be sold out before the nursery planting season in each year. This resulted in the non-utilisation of the entire nursery area during 1992 nursery planting season also which ultimately led to lower production of planting materials during 1993. However, during the 1993 season, plants raised in all the nurseries could be sold out well in time. This has helped to undertake nursery operations in the entire plantable area during 1993.

Based on the cost study made, the prices of planting materials raised in the nurseries were fixed at Rs.4.00 for green budded stumps (GBS), Rs.4.80 for brown budded stumps (BBS) and Rs.6.75 per metre of budwood (BW). Small growers were allowed a concession of Re.1/- Rs.1.80 and Rs.2.75 respectively for GBS, BBS and BW.

During 1993-94, 3,68,071 numbers of GBS, 4,44,083 nos. of BBS and 596 mts. of BW were sold from nurseries in the traditional area of Kerala and Tamilnadu. Majority of the materials was sold to the small holders at concessional rate. The concession allowed amounted to Rs. 14,37,891.80.

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In the non-traditional region, out of 4,35,852 brown budded plants produced 3,90,184 were supplied to the growers free of cost. Additional requirement of budded stumps to meet the demand in NE States was met through procurement from local private nurseries. Cost of the planting materials supplied to growers was recovered from the refund of poly-bagged plants under the RPD Scheme.

Since the entire planting material requirement in the NE Region could be met from the materials raised in Board's nurseries as well as those procured from private agencies, there was no need to arrange procurement and despatch of materials to the NE Region.

Production and distribution of rooted cuttings of mucuna:

The Board produced in polythene bags and distributed 25,073 nos. of rooted mucuna leguminous cuttings at Re.1/- per cutting through the nurseries in the traditional area.

Procurement and supply of rubber seeds:

During 1993 a quantity of 94.81 lakhs of assorted seeds was procured for raising nurseries as detailed below:

| | |
|---|---|
| Kanyakumari district (Tamilnadu) | 77.67 lakhs |
| Guwahati (Assam) | 9.79 " |
| Agartala (Tripura) | 7.35 " |

8. Advisory and extension services:

a) The field extension officers visited 3,688 rubber holdings to advise growers on scientific methods of rubber cultivation, production, exploitation andprocessing. In order to disseminate the correct technique in planting, maintenance and crop harvesting, 57 radio talks were recorded and broadcasted.

b) In addition to the monthly Malayalam publication of 'Rubber', advisory leaflets such as 'Tamil Malar' for Tamilnadu, 'Rubber Sangbad' for Assam and 'Rubber Sangbad' for Tripura were published on a monthly basis.

c) Demonstration of scientific tapping in small holdings:

The tapping demonstrators attached to the various regional offices visited 7,595 small holdings and demonstrated scientific methods of tapping and processing. Thrust was given to popularise the system of controlled upward tapping (CUT) among the large growers as well as small growers. This would help the planters to bring about maximum output from the plantations due for replanting within a reasonable span of time.

d) Imparting training to tappers through TT Schools:

Regular training to growers, tappers in scientific tapping and processing was undertaken through the various tappers' training schools opened at different locations. At present

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22 TT Schools are functioning in the traditional area and 7 in non-traditional areas. A total of 1,314 tappers were trained in 107 batches and an amount of Rs.10,98,690/- was spent towards expenditure for maintaining the tapping schools including payment of stipend to trainees.

Also arranged 1,802 short-term demonstration programme on scientific tapping for the benefit of tappers and small growers in different rubber growing centres which were attended by a total of 14,757 tappers/small growers.

9. Annual schemes on productivity quality improvement

a) Financial assistance to small growers for purchase of sheeting rollers:

In order to improve the quality of the sheet rubber produced in small holdings, the Board implemented a scheme to extend financial assistance at the rate of Rs.1000/- per set of sheeting rollers to benefit the small and marginal growers The scheme evoked great response and as many as 2010 growers availed of the assistance amounting to Rs.20,10,000/-.

b) Financial assistance for construction of small smoke house:

With a view to persuading and encouraging the small growers to adopt better processing techniques, the Board implemented a scheme by offering financial assistance to the tune of Rs.3000/- for construction of 85 kg capacity smoke houses. This scheme was popular among the small growers and during the period, 547 smoke houses were constructed for which a subsidy of Rs.16,41,000/- was disbursed.

A new low cost smoke house designed by an Engineer was also included among the smoke houses eligible for financial assistance. This smoke house also evoked great interest among the growers.

c) Scheme for supply of low volume power operated sprayer/dusters:

This scheme was introduced to popularise the use of low volume power operated sprayers/dusters among small growers for control of the leaf diseases. During the period 57 low volume sprayers/dusters were supplied to Rubber Producers Societies(RPSs) and individual growers. The scheme provides for grant of 50 percent subsidy limited to Rs.10,000/- for sprayer cum duster and Rs.8,000/- for sprayer without duster attachment for purchase by coperative societies, coop. banks and RPSs. Small growers who purchase the equipments are eligible for 25% subsidy on the cost of the machine or Rs.5000/- for sprayer cum duster and Rs.4,000/- for sprayer without duster attachment. A total of Rs.3,47,462/- was disbursed as subsidy under the scheme.

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d) Financial assistance for irrigation in rubber plantation:

Irrigation has been found to be beneficial to ensure proper growth of the rubber plants and to reduce the immaturity peri It increases the yield of rubber and helps quick rejuvination of tapped bark. In order to motivate the rubber growers to take up irrigation in the rubber holdings, implemented the scheme for giving financial assistance against capital investment for establishing proper irrigation facilities. The scheme provides for financial assistance @ Rs.2,500/- per ha.with a ceiling of Rs.5,000/- per grower, for promotion of irrigation in the traditional rubber growing areas. In the non-traditional areas the financial assistance is limited to Rs.2,500/- per ha.subject to a maximum of Rs.50,000/- per grower. An amount of Rs.2,05,714/- has been disbursed to 118 rubber growers in traditional areas as subsidy.

In the non-traditional areas the response was not encouraging where only Rs.1,76,500/- could be disbursed among 15 growers.

e) Procurement and distribution of cover crop seeds:

Leguminous cover crop establishment in rubber areas is a beneficial practice. For encouraging the small rubber growers to establish leguminous ground cover procured a total of 3,411.300kg. cover crop seeds and distributed 5,136.25 kg (including old stock) among the growers at 25% subsidy in price.

f. Assistance for fencing in Non-traditional area:

In non-traditional areas one of the major constraints in the expansion of rubber cultivation is cattle menace and the damage done by the tresspassers during the early years. In order to protect the plants from the stray cattle and the tresspassers, boundary protection to the planted area is essential. Due to heavy expenditure the small growers are not able to establish fencing and protect their young plants. Hence to encourage the growers to put up fencing around their plantation a scheme was implemented with subsidy in 2 different rates for general and SC/ST growers. Accordingly subsidy as below disbursed to general category and SC/ST growers:

| No. of growers | | Subsidy (Rs.) | Materials |
|---|---|---|---|
| SC/ST | 416 | 3,02,216/- | - |
| SC/ST | 295 | - | 42,715.5 kg (Barbed wire) |
| General | 308 | 3,13,311/- | - |

g) Scheme for supply of plantation requisites in non-traditional area.

Most of the essential plantation requisites are not readily available in the non-traditional areas. In order to help the small growers in these areas procure plantation requisites for increasing production and productivity,

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implemented a scheme for supply of selected plantation requisites in NT rubber growing areas. Materials such as rubber sheeting rollers, tapping knives, sieves, coagulating dishes, cup hangers, spouts, plastic cups and panel protection materials were purchased from available sources and transported to non-traditional areas and supplied to eligible growers, after realising the cost less an element of subsidy. The entire transporting charge is subsidised.

Plantation requisites worth Rs.7,28,000/- were purchased and distributed and the subsidy element for 93-94 came to Rs.108,840/-.

10. Seminars and campaigns:

As part of mass education and technology transfer programme, conducted 5294 seminars and group meetings through-out the rubber growing belts in India.

During April/May 1993 a campaign to impress upon the rubber growers the imperative need to conserve rain water in their holdings as an effective step to combat the harmful effects of drought was conducted throughout the rubber growing areas in India with the active support of Rubber Producers Societies. More than 60,000 growers and plantation workers participated in this educational drive conducted in about 4500 centres.

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11. Development of rubber plantations in non-traditional area:

For attaining self-sufficiency in the production of natural rubber in India, continued to promote development of rubber cultivation in non-traditional areas where the agro-climatic conditions are more or less suitable for rubber cultivation. The non-traditional areas include the States of Goa, Maharashtra, Andhra Pradesh, Orissa, West Bengal and North Eastern States. As a result of the sustained efforts of the Board a large number of new entrepreneurs have taken up rubber cultivation.

a) Goa & Maharashtra:

An area of 1,100 ha has been planted by 335 growers in the States of Goa and Maharashtra. In Maharashtra, rubber plantation is of recent origin and till date 150 ha has been planted by 35 growers. Some of the plantations have come into tapping and the yield is comparable to what is obtained in the traditional area. For promoting faster development the Board has taken on lease an area of 7 ha at Wakoli from the Konkan Krishi Vidhyapit, Dapoli. It is proposed to set up a nursery of high yielding polyclonal seedlings and a demonstration plot in this area. During '93 of 7.75 ha had been planted by 7 growers.

b) Andhra Pradesh:

The Board is maintaining a nursery at Devarappally in an area of 2.00 ha for raising and distribution of high yielding planting materials. This nursery can cater to the needs of the rubber growers in Andhra Pradesh as well as in Ganjam District of Orissa.

c) Orissa:

The Board had taken up development of rubber plantation in the state of Orissa in 1988. In order to execute the development programmes a Zonal Office was opened in Bhubaneswar in 1988 followed by 3 Regional Offices at Baripada (Mayurbhanj district), Bhubaneswar (Puri dist.) and Berhampur (Ganjam district). As a result of the activities undertaken, an area of 453.10 ha has been brought under cultivation as given below:

| | |
|---|---|
| Orissa | 273.10 |
| Andhra Pradesh | 178.00 |
| Madhya Pradesh | 2.00 |

d) West Bengal

A survey of suitable areas in West Bengal has revealed that selected areas in Jalpaiguri district, Siliguri and Naxalbari sub-divisions of Darjeeling district and certain portions of Islampur, Bhalurghat and Raiganj sub-divisions of West Dinajpur district are more or less suitable for rubber cultivation. To take up rubber cultivation in these areas the Board had opened a field office in Siliguri in Darjeeling district. Polybags and plants were supplied to interested growers from this office for raising polybagged plants for field planting.

e) NE States:

The Board continued to promote development of rubber plantations in NE States. The Zonal Office in Guwahati is coordinating the development activities in all the states

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in the North East excepting for Tripura, through regional offices stationed at Guwahati, Silchar, Diphu and Jorhat (in Assam) and Tura (in Meghalaya). The Zonal Office opened at Agartala, Tripura is monitoring the development activities in the state of Tripura through the regional offices opened at Agartala, Udaipur and Dharmanagar. An area of 978.00 ha brought under rubberplantation in Tripura and 302.37 ha in Assam during 93-94. The estimated planted area at the close of 1993 is given below:

| | |
|---|---|
| Tripura | 18,264 ha |
| Assam | 9,738 ha |
| Meghalaya | 3,635 ha |
| Mizoram | 910 ha |
| Manipur | 1,125 ha |
| Nagaland | 1,200 ha |
| Arunachal Pradesh | 41 ha |
| Total | 34,913 ha |

Taking into consideration the needs of this backward non-traditional region the Board is offering special incentives to encourage new entrepreneurs besides grant of financial and technical assistance. Schemes for supply of budded stumps and polybags for raising polybag nurseries and grant of cash assistance for maintenance of polybagged plants are in operation.

Block Plantation programme:

The Board in collaboration with the Tribal Welfare Department of the Government of Tripura, has started a rubber plantation project embracing an integrated approach for rehabilitation of SC and tribal people. Already about 500 ha has been planted up covering 364 beneficiaries. During the year 1993-94 an area of 297 ha was planted.

f) Andaman & Nicobar Islands:

The regional office started at Port Blair in 1985 is looking after the development of rubber plantation in A&N Islands. In addition to the two public sector plantations raised in the islands, the regional office was instrumental to bringing under cultivation 7½ ha under rubber.

g) NRETC Andamans:

The Rubber Board continued to maintain the Nucleus Rubber Estate and Training Centre comprising of a 202.5 ha of rubber raised progressively from 1965 to 1968 in South Andamans. All the civil construction works under the scheme had been entrusted to the National Building Construction Corporation (NBCC) which were completed by August 1993. The NRETC has recorded the highest production of 1,68,080 kilogram of rubber during the year. The Board had incurred an expenditure of Rs.41.12 lakh towards the running expenses of NRETC including capital expenditure for infrastructural development during the year 1993-94.

A rubber nursery in 1.85 ha is also maintained for production of high yielding planting materials for own use as well as supply to interested growers in the A&N Islands.

h) NRETC, Agartala

The Rubber Board has been maintaining at Agartala a Nucleus Rubber Estate cum Training Centre since 1985. The 100 ha plantation at Surendranagar (raised in a phased

manner during 87-88 and 89) has entered the tapping stage. Tapping commenced in December 1993 in the plantation raised during 1987. The work connected with building up of infrastructure such as processing factory, residential buildings, internal roads etc. is nearing completion.

Periodic training programmes were organised for growers on various aspects of relevance to rubber cultivation. Demonstration plots also were maintained. For generati n of planting materials, seedling nurseries were raised with the participation of beneficiaries in all the block plantation projects. The expenditure incurred during 93-94 for NRETC was Rs. 193,91,363/-.

The Board continued to run the 3 Tappers' Training Schools in Tripura. The duration of the tappers training was raised to 60 effective working days to impart the required skill to rather untrained trainees.

i) Energy plantations

In Tripura, the Board, in collaboration with the Department of Science & Technology, Government of Tripura, is implementing a scheme on raising energy plantations in the block plantation project being implemented for the tribals and SC beneficiaries. The project aims at raising fuel wood and energy plantations for meeting the requirement for drying rubber, fuel wood for cooking as well as for installing garifires An amount of Rs.5 lakh was transferred to the Rubber Board by the Government of Tripura during 93-94 for the purpose and an area of 34 ha has been planted. The plantations are mostly raised as belts around the rubber plantations to serve as wind belts.

12. Vigilance Flying Squad

With the object of maintaining constant vigil against delays, possible malpractices and corruption in the field work and to arouse awareness of devotion to duty amongst the staff working in the field, a small anticorruption cell (Vigilance Flying Squad) was constituted in 1989. The major function of the unit is preventive vigilance. During the period under report the Squad checked 122 scheme connected cases to find out the correctness of the reports submitted by the field staff and also to check whether the field staff adhere to their approved tour programmes. Surprise inspections were conducted on 356 occasions in Regional Offices/Field Offices, 21 occasions in Tappers' Training Schools and on 10 occasions in Regional Nurseries. The squad enquired into 34 complaints against officers and appropriate steps taken where irregularities were noticed. The operation has brought about an awareness among the field staff to maintain high level of integrity and ensure prompt disposal of cases.

13. Rubber Promotion

Promotion of Rubber Producers' Societies

Organisation of Rubber Producers' Societies, the village level voluntary organisation of rubber growers was continued. The number of RPSs has gone upto 1379, including 69 promoted during 1993-94. These Societies function as catalysts among rural rubber growers to adopt new developments in agro-technology and promote quality crop processing and marketing.

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Progress of activities in the RPSs was monitored through 538 inspections and arranged for auditing their accounts. Many of the productivity improvement programmes of the Board were implemented through the active association of the RPSs.

Implementation of the productivity enhancement component of the World Bank Project was also monitored. Under this project fertilizers required to cover an area of 40,000 ha were purchased. Rainguarding materials and spray materials were purchased to cover 16700 ha and 25000 ha respectively. Items such as Plastic cups, Aluminium Sieves, Dishes etc. were also procured. All these items were procured through competitive bids. These inputs were distributed to the small growers through 18 Regional Offices.

## IV. RUBBER RESEARCH

Scientific research is carried out in almost all the disciplines of rubber agriculture and in rubber technology. The thrust areas of research are on reducing the immaturity period, increasing productivity and improving quality of the end product. All these programmes are carried out under the Rubber Research Institute of India which has Research Division in Agronomy/Soils, Botany, Plant Pathology, Plant Physiology and Exploitation, Rubber Chemistry, Physics and / tech- / nology, Biotechnology, Germplasm and Agriculture Economics. At present over 70 experiments in Botany, Agronomy, Pathology, Germplasm and Physiology are conducted.

To give research support for extending cultivation of rubber in non-traditional areas, a Research Complex has been established with its Head Quarters at Guwahati. The complex has Regional Research Stations in Assam, Meghalaya, Mizoram and Tripura. Regional Research Stations are also functioning in Dapchari (Maharashtra), Kamakhyanagar (Orissa), Nagarkatta (West Bengal) and Bastar (M.P). At the Research Complex and the Regional Research Stations investigations are carried out as per the requirements of each region, as weather condition in this region are not very suitable for rubber cultivation compared to that of the traditional area. Two Hevea Breeding Sub-Stations are functioning at Paraliar, Kanyakumari Dist., Tamilnadu and Nettana, D.K.Dist., Karnataka. The Institute is also maintaining a full fledged Library and Documentation Centre. Five mobile soil and plant tissue testing laboratories are in operation. Scientists of this Institute serve in the teaching faculty of various training programmes conducted by the institute and also in the universities in and around Kottayam and in the Kerala Agricultural University.

Close laison is maintained with many foreign rubber research institutes by being a member of the International Rubber Research and Development Board. Reciprocal visits are made by scientists from various institutes to exchange ideas and enrich knowledge. An international study is being carried out specifically in Tapping Panel Dryness.

### a) AGRONOMY/SOILS

Field experiments have been initiated to study the possibility of introducing the technique of low input sustainable agriculture in rubber plantation with the help of biofertilizers, organic manures and intercrops and by limiting the use of chemical fertilizers.

Application of water during summer to immature rubber plants through drip irrigation has continued to give better growth compared to unirrigated plants. Field experiments on the fertilizer requirement of rubber were in progress. In Pathanamthitta area, for clone RRII 105, NPK at the rate of 30:30:20 kg. was found to be optimum during the immature phase. In an experiment in Thrissur area for clone RRII 105, NPK at the rate of 20:20:30 kg per ha was optimum for good yield.

Weed control experiments in seedling nurseries indicated that the pre-emergence herbicide, Diuron marketed as 'Klass' gave good control of weeds for about 4 months when given as two applications at 2 kg and 1 kg per ha at 2 months interval.

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Field evaluation of phosphatic fertilizers indicated that mineral rock phosphates are as good as water soluble phosphatic fertilizers for growth of young rubber. Use of 'ureaform' gave better growth of rubber plants and recovery of nitrogen compared to urea. Further studies on the use of bowl sludge, a waste product from latex centrifuging industry, as a source of phosphatic fertilizer were under way.

Significant differences in the aluminium concentration of soil were noticed at different depths. Development of further DRIS norms and field testing of the accuracy of DRIS indices were in progress.

Analysis of 8620 soil and 1640 leaf samples were conducted in Regional Laboratories and 1250 soil and 1100 leaf in the Central Laboratory (RRII) and fertilizer recommendations were offered to the rubber growers.

b) BIOTECHNOLOGY

Somatic Embryogenesis: Integumental tissue of the immature fruits were used for the induction of callus from which globular embryoids were obtained. The embryoids developed into plants. However, extensive procedural refinements are warranted to improve this pathway. This pathway may be utilized for synthesising transgenic plants. After appropriate refinements, this may prove useful as an alternate propagation system.

Shoot tip culture: Shoot tips were utilized for generating plants. Over two hundred plants were obtained during this period by this pathway and about 70 bigger plants from this population were planted in the field and the remaining populations of smaller plants were kept in polybags for planting during next season.

Biochemical investigation of Brown bast: Since brown bast is considered the primary problem facing the crop, two directional approaches has been initiated to elucidate this problem. Firstly, genetic map of the brown bast tolerant and susceptible clones need to be prepared in order to ascertain whether any gene level difference exists between tolerant and susceptible plants. Since cytokinin level in the stock is suspected to be a major contributing factor causing brown bast susceptibility vs tolerance, measures to estimate cytokinins have been initiated. Since cytokinin levels are too minute in quantity in plant systems, measuring such quantity is complex and time consuming.

c) BOTANY

Breeding and Selection: Regular monthly yield recordings and annual recording of secondary attributes were done in 39 small scale trials, 11 large scale trials and 20 block trials. Yield components were recorded from 1982, 1985 and 1988 trials. Out of 15 clones identified as potential high yielders from 1982 hybrid clones, six continued to exhibit the trend during the first year of tapping. A total of 300 hybrid seedlings resultant of 1993 hybridization programme and 650 seedlings from genetic variant were well maintained in the nursery. Incorporating the selected parents based on yield components, 3900 hand pollinations were done. Juvenile growth characters were recorded from the clonal nursery evaluation trials.

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During the period under report eight field experiments were laid out, six at C.E.S., Chethackal, one at Shaliacary and one at Wayanad. At C.E.S, two promotion plot trials incorporating 15 hybrid clones, five selections from mutation and polyploidy, two trails on progenies of prepotent clones, one trial on genetic studies and one small scale trial on ortet selections were taken up. One block trial comprising of 6 clones was laid out at Shaliacary and another with 5 clones was also planted at Mynad. Ortet selection programme was also initiated at two large estates, Malankara and Kaliar. Assessment of yield and secondary characters are being done from the selected mother trees. Four field experiments on clonal composites were also laid out at Regional Experiment Station, Nagrakatta, West Bengal.

Three promising RRIM clones (RRIM 712, RRIM 722, RRIM 728) were introduced from Malaysia. In reciprocation, 10 meters budwood each of the clones RRII 109, RRII 176, RRII 208 and RRII 308 were exported to Malaysia. The introduced clones were multiplied. Incorporating the newly introduced clones and nine promising selections a polybag nursery was raised at Central Experiment Station, Chethackal for the proposed field evaluation trials. Seedlings having high vigour and dwarf stature were selected multiplied and raised in polybags for further evaluation.

Propagation and planting techniques: Five field experiments connected with propagation and planting techniques were well maintained and observations were recorded. The percentage of green budding success was increased when the opening time of bench grafted plants was delayed to 30 and 40 days instead of 20 days. In general bag plants deep planted burying budunion to different depth (5, 10, 15 cm) showed more vigour than normally planted polybags.

Anatomy: Detailed investigations on bark and wood anatomical parameters are in progress. Possibility of replacing TPD (Tapping Panel Dryness) affected bark with normal bark by grafting is being studied. Studies on virgin and renewed bark showed difference in the proportion of soft and hard bark amount and distribution of sclerides, tannin cells and crystals. Studies on stimulated bark and wood are in progress.

Cytogenetics: Monthly yield recording and annual girth measurements were carried out in the field trials on polyploid and irradiation. Two selections from the materials resultant of irradiation continued to show better yield than RRII 105. Detailed Karyomorphological studies on eight clones RRIM 600, GT1, Tjir 1, GI 1, PB 217, PB 235, PB 314 and RRII 203 were done. Significant variation was observed with respect to chromosome length and position of centromere.

d) GERMPLASM

Wild Brazilian genotypes (4621 in toto) are conserved in the base nurseries. Preliminary evaluation at nursery level indicated high variability in certain important traits like denisty of latex vessel and vigour. Among the wild genotypes, the accessions from Matto Grosso showed comparatively better tolerance to shoot disease. Among the conservation 368 genotypes are now under different stages of further field evaluation. Another set of 195 genotypes are being multiplied for field evaluation during 1994 planting season. Ex situ conservation of old popular clones and other secondary diversity materials are being conserved.

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Physiological and biochemical evaluation for stress tolerance is envisaged as a research component of the World Bank Aided Rubber Development Project.

e) MYCOLOGY AND PLANT PATHOLOGY

Many field and laboratory experiments were conducted to find out the ideal pesticides and fungicides for plant protection, and to reduce the cost of plant protection measures. Studies were also conducted to increase the soil fertility by introducing beneficial micro organisms and to control disease and pests by bio control agents.

A new fungicide formulation, oil dispersible Mancozeb was found to control abnormal leaf fall disease of rubber as that of copper fungicide while phosphorus acid controlled shoot rot and bark rot. Phosphorus acid was as good as Mancozeb in the control of bark rot. Field investigation on the control of powdery mildew disease of rubber nursery showed that spray application of Topas (0.05%) Bavistin (0.05%) and Bavistin + Sulfex (0.025% + 0.125%) are superior to wettable sulphur. Dusting of a mixture of Calixin (1.5% dust) 3.5 Kg and 6 kg sulphur dust per hectare and three such dusting controlled powdery mildew and the results are on par with 3 founds dusting sulphur dust or calixin dust alternatively with sulphur (Calixin - sulphur dust - calixin). Field experiments on the control of Gloeosporium leaf spot showed that weekly application of 0.2% Ridomil, 1% Bordeaux mixture or 0.2% Indofil M. 45 are more effective in combating this disease. Tested the effect of different species of Trichoderma on the control of Phytophthora spp. The antagonists caused lysis of oospores of the pathogen. Two fungus, Phythium sp. and Macrophomina causing damping off and dry root disease respectively. were isolated. Initiated investigations on the biochemical changes in rubber seedlings upon the application of different doses of nitrogenous fertilizers and infection by Corynespora cassiicola.

Dual inoculation of Pueraria phaseoloides with Bradyrhizobium and Beijerinckia was found to augment nodulation, biomass production of cover crops and girthing of rubber plants. It also caused considerable reduction in weed growth. Bradyrhizobium from Mucuna bracteata nodules increased rooting in M.bracteata cuttings and their establishment. Bradyrhizobium was mass cultivated and distributed to planters as bio-fertilizer. A phosphobacteria was selected and inoculated to rubber seedlings which increased rate of girthing in seedlings at 50% rock phosphate level. Obtained endomycorrhizae from rubber growing soils and they favoured the nodulation, biomass production and nitrogen fixation in P. phasioloides. Milk white mushroom cultivation technology on rubber wood saw dust was developed to suit our condition.

Endomopathogenic fungi Beauveria spp. were tested for the control of root grubs and compared with chemical control methods Beauveria brongniartii was found to control the pest and increase stand of rubber seedling. The effect of this fungi is superior to chemical control methods. A population survey of root grubs indicated the occurence of Holotrichia senata in addition to Anomala sp. Another trial for rat control established the superiodity of Brodifacoum and Roban over zinc phosphide in controlling rats. Placing phorate 10 G in the nursery area was found to ward off the rabbits due to foul smell.

A survey conducted showed over 30% loss of bee hives in the Southern states . Insects damaging rain guards were identified as Gryllcris sp. and a paste formulation HCH 5% NP effectively controlled them. Aldrin 0.1% and Aldicarb 0.01% were found to effectively control termites and slugs respectively. The slug and snails are controlled by the repelling action of Bordeaux paste applied to trunks of rubber.

A survey was conducted on the occurence of parasitic nematodes. Kanhikulam soils harbourd more nematodes. Rubber seedlings at Kadakamon nursery showed the infection of plant parasitic nematode.

Diffusion treatment with sodium pentachlorophenate and copper sulphate or zinc sulphate was found to be effective for the preservation of rubber wood planks.

f. PLANT PHYSIOLOGY AND EXPLOITATION

Experiments were conducted in the fields of exploitation (tapping), Environmental Plant Physiology, Biochemistry, tapping panel dryness (TPD), introduction of medicinal plants in mature plantations, stock-scion interaction, etc.

Efforts to introduce and popularise Controlled Upward Tapping have started showing results. The system has now become widely recognised and accepted by the planters. In clone RRII 105 results indicate higher returns from third daily tapping compared to alternate daily tapping. Efforts are now underway to further improve the yield performance by employing stimulation of trees under third and fourth daily tapping system.s Alternate daily tapping of one third spiral cut in clone RRII 105 and daily tapping in clone RRII 203 showed promising results. Upward tapping from 30cm height from bud union did not show any advantage in terms of yield or incidence of TPD. As a whole it is disadvantageous.

In the high elevation, clone RRII 118 continued to show higher girth and yield. Eighteen more clones were subjected to screening for tolerance to soil moisture stress during establishment phase. Combined imposition of polyethylene glycol (PEG) and high temperature stressess to isolated leaf discs and measurement of membrane stability was found to be a good method to screen genotypes for tolerance against multiple stressess. Young leaves showed more susceptibility to thermal injury than mature leaves.

It was found that three species of medicinal plants Plumbago rosea, Adathoda vasica and Strobilanthus heanianus can be economically cultivated in mature plantations without adversely affecting the latex production. Adhoc package of practice recommendations are under consideration of the scientific advisory committee.

Air layering using sphagnum moss was successful in getting 33 - 66% rooting depending on clone. These rooted cuttings showed 69% establishment success. These findings are novel.

In connection with studies on tapping panel dryness, DRC, plugging index, sugars, thiols and inorganic phosphorus were estimated in 500 samples of latex. Lipids, protein profiles and bursting index were recorded in 200 samples of latex. Twenty five bark samples were analysed for phenols, lipid peroxidation and for the enzyme superoxide dismutase.

In RRS, Dapchari, trees subjected to irrigation were opened for studying effect of irrigation on yield component. With irrigation immaturity period could be reduced to loss than 6 years under rainfed condition.

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g) RUBBER CHEMISTRY, PHYSICS AND TECHNOLOGY

Continued investigations on improvement of natural rubber processing, chemical modification and technological aspects.

Primary processing: Evaluation of the modified solar drier of 800 kg capacity was completed and the final report was submitted. A portable solar drier of 100 sheets capacity was evaluated to find out the firewood consumption. Fabrication and fitting of solar panels to the drier is in progress. Studies on the ageing behaviour of raw sheet rubber prepared using sulphuric acid and that of vulcanisates prepared there from indicated that the strength was not adversely affected by the use of sulphuric acid, at the recommended dosage.

Chemical modification: Reaction conditions to prepare Epoxidised Natural Rubber (ENR-25 and ENR-50) at pilot plant scale were standardised. Evaluation of the technological properties of the ENR prepared at the pilot plant was completed. Attempts are being made to have tie-up with an industry to produce ENR on a commercial scale. Stress relaxation studies of liquid natural rubber containing nitrile rubber compounds were undertaken.

Rubber Technology: Designed and developed a mould for latex collection cup suiting to the Injection Moulding Machine. The machine was put in operation and product was made, as a part of a project work of two students from Fachhoschule, Germany. Fracture mechanics analysis has been carried out on three types of rubber to metal bonded test pieces. The Fracture energy was found to depend on the test piece geometry.

Rubberisation: Of bitumen using waste forms of rubber has been initiated. Comparative evaluation of ISNR 20 with sheet rubber (RMA 4 and RMA 5) showed that ISNR 20 has better consistency and comparable properties. However, sheet grades exhibited better abrasion resistance, ageing and flex characteristics. Rubber seed oil and epoxidised rubber seed oil were found to be useful as activator cum plasticizer in polychloroprone rubber based compounds. Initial trials on rubber modified urea as a slow release fertilizer showed encouraging results.

h. AGRICULTURAL ECONOMICS

A comprehensive study on commercial yield evaluation is under progress which encompasses aspects such as seasonality and stability of yield, scrap content, tapping systems, etc. The data base consists of information gathered from 45 large estates for a period of 26 years (1966 - 93). The data are being entered into the computer for analysis.

The economics of different tapping systems was analysed on the basis of a four year experimental data. The estimated short run and long run net income and other performance criteria have shown that 1/3 S d/1 is the comparatively suitable mode of tapping for small growers in the case of RRII 203.

A study on rubber wood processing industry in the form of a status report has been completed. The production of rubber wood during 1993-94 was 1235 thousand cu.m and the sawn timber available for processing was 259 thousand cu.m. The total installed capacity of the processing industry was only around 15 per cent of the available sawn timber and the capacity utilisation was 37 per cent. The important problems identified were the absence of a statutory authority to implement and monitor the standards for processing and quality control and the inability of the processing units to control the quality of the raw material in the primary market.

The estimated current production of rubber seed oil and cake is 4500 MT and 8370 MT respectively. The rubber honey sector has shown signs of recovery. The estimated production of rubber honey during 1993-94 was 550 MT.

Other major research projects such as evaluation of the insurance scheme, input subsidy and extent of adoption of modern technology, market structure of medicinal plants, foreign trade in rubber products and operational efficiency of rubber plantations under different levels of management are in different stages of progress.

i) RESEARCH SUPPORTING ACTIVITIES

(a) Library and Documentation

The Library and Documentation Centre continued its important role of communication and dissemination of information. During the year 1993-94, 123 new books and 224 bound volumes of journals were added. The library subscribed to 165 journals and 9 dailies. About 130 other journals were also received either as gift or as exchange. Four issues of documentation list, four numbers of rubber alert, 150 numbers of SDI bulletin and two issues of list of new additions were compiled and distributed. As part of the database development 14,450 documents have been indexed.

(b) Instrumentation

Timely maintenance and proper repairs of all the instruments in the different research divisions and various regional research establishments were promptly carried out. Installation and calibration of new equipments were also undertaken.

(c) Art/Photography

Preparation of photographs, charts, graphs, etc for publication as well as for presentation of scientific papers in conferences and symposia was attended to.

(d) Statistics

Experimental data from different research divisions were statistically analysed. Statistical layouts for field experiments and laboratory investigations were prepared. Local area network (LAN) was established at the RRII and file movements relating to purchases were computerised. The computer programme for fertilizer recommendation has been modified and is in the final stages of implementation. Programmes for retrieval of important addresses have been developed and are in use. About 2000 questionaires relating to survey on spray details were processed. Training is being given to Scientists of the RRII on MS-DOS, BASE IV, LOTUS 1-2-3 and Wordstar.

j) EXPERIMENT STATIONS

The RRII has two experiment stations, the Central Experiment Station at Chethackal near Ranni and the Experiment Station at its headquarters at Kottayam.

Central Experiment Station has a total area of 254.8 ha. An area of about 20 ha was planted for different experimental purposes during 1993-94. The total crop production during the period was 2,00,978 kg. The total rainfall received during the period under report was 3416.8 mm. There were 209 permanent workers and 204 casual workers on the rolls. The total mandays engaged for different operations in the station during 1993-94 was 74737. The dispensary functioning in the station provided services to 14,088 patients. A check dam with a water storage capacity of 5000 cum has been constructed for conserving water.

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The Experiment Station at the headquarters of the RRII has a total area of 32.87 ha. The area under rubber planting is 19.32 ha, of which 4.13 ha was under tapping during the last part of the year under report. There were 40 permanent and 71 casual workers on the roll. The total mandays engaged during different operations was 17,945. The total rainfall received during the year was 3,576.9 mm.

k. RESEARCH COMPLEX FOR NORTH EASTERN REGION AND REGIONAL RESEARCH STATIONS.

North Eastern Research Complex, Guwahati: North Eastern Research complex of Rubber Research Institute of India is co-ordinating all research projects of Regional Stations located at Guwahati in Assam, Tura in Meghalaya and Jalpaiguri in West Bengal. The research activities of all stations are concentrating mainly to evolve agrotechnology against the agroclimatic constraints prevailing in this region.

Regional Research Station, Guwahati, Assam: Research activities of this station are being mainly concentrated on the evaluation of existing clones and germplasm, nutritional requirement of rubber in mature and immature phase, performance of rubber under different intercrops like Ginger and banana and also under different phosphatic fertilizers. Preliminary field evaluation of Brazilian germplasm were also made keeping Wickham clones as standard. Brazilian and Wickham germplasm were screened against virulant strains of Agrobacterium tumeraciense. Some hand pollination work was also undertaken. Experiment on yield component analysis of different clones has already started for evaluation of clones. Yield data obtained so far indicating that best emerging clones in terms of yield is RRII 600 followed by RRII 235 and RRII 105. Surveys on pests and disease were carried out in different rubber growing locations. Experiments were also conducted for their effective control. In addition, control of Oidium disease by Zinc manipulation has also started and it is showing encouraging results. Experiments were carried out for investigation of suitable intercrops during immature phase with ginger and banana which have some promising results. Experiments were also conducted for effective and economic control of weeds through chemical weedicides.

Regional Experiment Station, Nagrakatta, Jaipalguri, West Bengal.

The thrust area of research of this station is to breed and identify clones suitable for this region, to select suitable intercrops during immature phase, to study suitable exploitation system of different existing clones, to evaluate Brazilian germplasm. The performance of four clone trial of 30 high yielding clones are being evaluated. In addition nutritional requirement of rubber in North Bengal condition is also being worked out with clone RRIM 600. The results indicate that the plants given high dosage of NPK attained maximum girth and will attain tappable girth within six years. Trial on clone blending as well as optimum planting density have also been taken up.

The Research Station is mainly concentrating the evaluation of growth performance of different clones and other parameters for growth variation. In addition the work on suitability of intercrops in immature phase of rubber growth, fertilizer requirements under different ground covers, multiclonal requirement of seedling nursery, evaluation of polyclonal materials, survey of disease and pests and their effective control and cultivation of mushroom and rearing rabbit under rubber plantation are being carried out. About 60% plants of clone trial (1985) have attained tappable girth and exploitation of trees will start this year.

High Altitude Research Station, Darachigre, Tura, Meghalaya:

This station located at the altitude of 1100 m from m.s.l. is mainly concentrating on the work of evaluation of different clones and polyclonal materials at higher altitudes. The growth parameters recorded so far at RRS, Ganolgre and HARS, Darachigre have been compared and the results indicate that rubber cannot be grown beyond 600 m. from m.s.l. at least in Garo hills. The performance of intercrop trial at District Development Centre, Jenjitchigre, Tura with banana, pineapple and other cover crops are encouraging.

Regional Research Station, Agartala:

Research Projects: The station has 17 'on going' projects in the different disciplines. The projects have been formulated to cater to the specific needs of the North Eastern Region. Experiments are being conducted to formulate location specific package of practices for rubber cultivation. The priority areas of research are to refine the fertilizer recommendations, identify ideal clones for the region, optimum density of planting, exploitation systems suited for the region etc. Initial observations indicate the necessity of studying the performance of clones in relation to the climatic conditions prevalent in the region and intensive studies are being undertaken to ascertain the effect of cold temperature on yield and yield components in the different clones. A collection of 366 nos. of Hevea germplasm has been established in the station and evaluation and characterisation of the same are in progress.

Farm: The farm has a total area of about 85 ha. of which 18.84 ha. have been newly purchased and is envisaged to be utilized for evaluation of Germplasm available in the farm. The fencing of the newly purchased area is underway.

The farm also has a budwood nursery of about 5000 points and a seedling nursery consisting of 5000 seedlings which are being budded. The farm has 24 tapping blocks and a total of 9730.0 kg of dry rubber, 2033.0 kg. of scrap and 943.5 kg of cuplump was realised. A fully functional processing shed has been established with smoke house facility.

Labour: A total of 20917.5 mandays were engaged which includes 17959.5 men workers and 2958 women workers and the total wages paid was Rs.4,27,229.75 for the reporting period.

Laboratory: A well equipped laboratory is functioning with sophisticated instruments like the Atomic Absorption Spectrophotometer, UV Spectrophotometer, Pressure plate apparatus etc. The laboratory caters to research as well as advisory work as and when necessary.

Library: A library with about 823 books and 30 journals is functioning and is utilized by both scientists and development staff of this region.

Advisory: A total of 868 soil samples, 733 leaf samples and 1534 latex samples were analysed in the period under report.

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## V. PROCESSING AND PRODUCT DEVELOPMENT

The Processing and Product Development activities mainly concentrate on providing support to rubber processing and rubber goods manufacturing industries in areas of factory design, product development, quality improvement and treatment and disposal of effluents. These activities were carried out through

1) Engineering Consultancy
2) Quality Control
3) Technical Consultancy
4) Factory Management
5) Finance and Accounts.

A seminar was organised on latex protein allergy for the benefit of exporters of products manufactured from rubber latex. The requirement of sophisticated latex product consumed in developing countries were explained to the rubber goods manufacturers for effectively facing challengs in the international market. Another seminar on consistency in quality of TSR was also organised for the benefit of crumb rubber processors.

### A) Engineering Consultancy

Engineering and technical assistance was provided to the crumb rubber factories established under the Kerala Agricultural Development Project (KADP). Also provided support to new entrepreneurs in setting up rubber processing factories under private, co-operative and Government undertakings.

### a) Factories commissioned during the period

All the constructions and machinery erection work of the following factories were completed during the year.

1) M/s. Kavanar Latex Ltd at Vakakkad near Palai for producing technically specified rubber from latex. The capacity of the factory is 10 tonnes per day. The factory has already started trial production and is now operating on single shift.

2) A Latex Centrifuging Factory was commissioned under Thiruvalla Taluk Co-operative Rubber Marketing Society, with capacity of 10 tonnes of field latex per day. It has one latex centrifuging machine working on 3 shifts and is now doing job work.

3) Assisted establishment of the Latex Centrifuging Factory under Kannur Rubber Marketing Co-operative Society. Latex Centrifuging Factory and a latex based crumb rubber unit under M/s Malankara Rubber Producing Company Ltd at Thodupuzha, and an Intermix unit under M/s Kerala State Co-operative Rubber Marketing Federation at Kaduthuruthy.

All the engineering services for establishment of the factories were provided.

### b) Factories under construction

1) Civil work is nearing completion for a 10 tonnes per day Crumb Rubber Factory for M/s Ponmudi Rubbers Pvt Ltd near Thiruvananthapuram. Electrification work and machinery erection are progressing.

2) Construction works of Latex Creaming Plant being established by the Kaduthuruthy Rubber Marketing Co-operative Society Ltd under ICDP programme is also nearing completion.

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3) Engineering services are provided to M/s.Monippally Co-operative Rubber Marketing Society for the establishment of a latex creaming plant under ICDP programme.

4) Tender documents were prepared and supplied to M/s Meenachil treated rubber wood Pvt Ltd for establishment of a treated rubber wood factory at Peringalam near Erattupetta.

5) Assistance provided to M/s State Farming Corporation of Kerala Ltd for establishing a latex centrifuging factory. Electrification work of the factory is progressing.

6) Necessary support was given to Palghat District Co-operative Rubber Marketing Society for the renovation of the Crumb Rubber Factory which was destroyed by a fire accident.

7) Assistance was given to the Meenachil Rubber Marketing and Processing Co-operative Society Ltd for the establishment of a Crumb Rubber Factory under ICDP Programme.

8) Assistance provided to M/s Palai Marketing Co-operative Soceity Ltd. for establishment of a Latex centrifuging unit under the ICDP programme.

B. QUALITY CONTROL

Details of analytical work done and the details of inspections done for specification work are given in table 1 below.

| Month | Central lab | | Specification lab | |
|---|---|---|---|---|
| | No. of samples received | No. of parameters determined | No. of inspections | No. of parameters determined on inspection samples. |
| 1 April, '93 | 1358 | 3255 | 64 | 424 |
| 2 May, '93 | 1490 | 3312 | 135 | 819 |
| 3 June, '93 | 1550 | 3470 | 56 | 471 |
| 4 July, '93 | 2387 | 5923 | 62 | 543 |
| 5 August, '93 | 2139 | 5091 | 62 | 446 |
| 6 September,'93 | 2525 | 6371 | 50 | 441 |
| 7 Oct. '93 | 2252 | 5534 | 52 | 406 |
| 8 Nov. '93 | 2481 | 5473 | 81 | 538 |
| 9 Dec., '93 | 2694 | 7689 | 58 | 426 |
| 10 January '94 | 2625 | 6598 | 62 | 475 |
| 11 February '94 | 2351 | 5830 | 69 | 498 |
| 12 March, '94 | 2228 | 5154 | 43 | 380 |

Total revenue collected for the different types of services to the industry is Rs.10,45,000/-. Also provided designs and guidelines for establishment of effluent treatment plant under M/s Karnataka Forest Development Corporation and M/s Malankara Rubber & Produce Company.

C. TECHNICAL CONSULTANCY

Prepared 13 project reports as per the details given below -

| | |
|---|---|
| Rubber Processing units | .. 6 Nos. |
| Rubber Products manufacturing units. | .. 2 Nos. |
| Revision of project reports. | .. 4 Nos |
| Evaluation of project reports. | .. 1 No. |
| Total | .. 13 Nos. |

a) Development work

Developed technical knowhow for 9 products and the knowhow was transferred to the industries. The products include surgical tubings, chlorinated rubber gloves, neolite sheets, NR sponge, NR diaphragm compound etc. Eight different rubber products are in various stages of development.

b) Technical assistance to processing and product manufacturing units.

Received 324 sample rubber products and chemicals from different rubber products manufacturing units, which were analysed for 2650 parameters. Results were communicated to the industries. Guidance was given to interested parties on rubberisation of roads and rubberisation of play grounds. M/s. Rehabilitation Plantations Ltd., Punalur is being given assistance for establishment of a factory for producing calendered rubber sheets.

c) Production of Radiation Vulcanised Latex

During the period the Radiation Vulcanisation Plant produced 10 batches of RVNRL. The latex produced was sold to neighbouring small scale industries. Production of catheters, surgical tubings, balloons and nipples were started in the plant using Radiation Vulcanised Latex. Samples of catheters were given to Kottayam Medical College and results of their evaluation are awaited. Medical products are being sent to Sree Chithra Thirunal Medical Centre, Thiruvananthapuram for evaluation.

d) Marketing.

An exporters' directory was compiled and 500 copies were printed. Also prepared market survey report for four products. Survey is being continued for market survey reports for seven other products.

D. FACTORY MANAGEMENT

Conducted a seminar on technically specified rubber for the benefit of manufacturers of technically specified rubber. In the Pilot Latex Processing Centre the production was 207 tonnes. The capacity utilisation in this unit has improved as part of the idle capacity was utilised for job works for M/s Palai Marketing Co-operative Society. The Pilot Crumb Rubber Factory also recorded substantial improvement in production

Performance of factories established under Joint Sector.

1) Pazhassi Rubbers (P) Ltd.

This Company has not so far started full capacity utilisation and is incurring loss. The production is only around 80 to 100 tonnes and the factory can break even only when the production level of 140 tonnes per month is reached for which steps are under way.

2) Pamba Rubbers (P) Ltd.

The factory is working on 3 shift basis. Capacity utilisation is almost 60%. A generator was installed recently and it is expected that with this the factory can reach full capacity utilisation. Break even level of production is 130 tonnes a month. This level was reached during February, 1994.

.....

3) Periyar Latex (P) Ltd.

This is a latex centrifuging factory. Currently this factory is working profitably. There is reasonably good capacity utilisation in this factory as job work is also done using idle capacity.

4) Kavanar Latex Pvt. Ltd.

The Company is now working on single shift. The capacity utilisation is 30%. It is expected that the factory can start full capacity utilisation/receiving power connection from KSEB. Steps are being taken for popularising the use of latex crumb among the latex goods manufacturing industries to create enough market for the latex crumb.

VI. FINANCE AND ACCOUNTS

Details of equipments supplied for establishing latex/scrap collection centres are given under.

| | | | |
|---|---|---|---|
| 1) | Platform balance | : | 52 Nos. |
| 2) | Chemical balance | : | 58 Nos. |
| 3) | Air oven | : | 59 Nos. |

b) Financial assistance

An amount of Rs.85000/- was paid for establishment of smoke houses under Rubber Producers' Societies. For establishing group processing centres, an amount of Rs.21,952/- was disbursed to RPSs.

The Rubber Marketing Co-operative Societies were extended an amount of Rs.22,32,500/- as share capital assistance for establishment of rubber processing factories.

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## PART - VI

## ADMINISTRATION

The major functions in Administration consists of constitution/reconstitution of the Board and its committees, maintenance of the establishment, collection of cess, licensing, market intelligence, price collection and marketing, collection of statistics, publicise Board's schemes and activities, carry out labour welfare measures, attend to vigilance and legal functions, official language implementation and disbursement of retirement benefits.

The functions are carried out through the following sections/divisions/offices:

-1 Establishment (General Administration, Personnel Administration & Entitlement)
-2 Excise Duty
-3 Market Intelligence
-4 Licensing
-5 Marketing
-6 Statistics & Planning
-7 Publicity
-8 Labour Welfare
-9 Internal Audit
10 Legal
11 Vigilance
12 Official language implementation, and
13 Sub Offices and Liaison Offices.

### 1.1 General Administration/Staff Welfare

The activities of the Board for the year 1992-93 were documented through the Annual Report which was presented to the Government as required under clause 8(3)(c) of the Rubber Act.

During the period 38 employees were given financial assistance for construction of own houses by advancing Rs.29,42,950/- and Rs.2,89,920/- to 48 employees as vehicle advance. In addition an amount of Rs.9,00,000/- was drawn from the HDFC and distributed to 21 employees towards house building advance.

Maintenance works of the office buildings and the staff quarters were carried out in time. Work on the seven storey new headquarters building was in progress. The structural works were over. Plastering, flooring, electrification, wiring for telecommunication, equipping the different rooms etc. were to be completed. The services of the post, telegraph, telephone and telex were harnessed to provide good communication facilities between the Board and its clientele.

1.2 Personnel administration

Selection of suitable personnel to vacant posts for the smooth functioning of the Board was ensured by following recognised recruitment rules and statutory provisions relating to reservation of posts for candidates from the SC/ST/OBC communities. There were properly constituted selection committee/DPCs for selection of personnel by evaluating the merits/skills of the candidates. Periodical returns on the personnel recruited were sent to the Government and to the Employment Exchange. Service books, leave accounts and personal files of employees were properly maintained. Retirement benefits were newly given to 21 employees including 4 who had left on voluntary retirement. As on 31-3-1994 there were 204 pensioners on the Board's rolls.

The total number of officers and staff under the Board as on 31-3-1993 was 2032 as detailed below:

| Name of Department | Group A | Group B | Group C | Group D | Total |
|---|---|---|---|---|---|
| Administration | 28 | 58 | 166 | 20 | 272 |
| Rubber Production | 86 | 345 | 723 | 82 | 1235 |
| Research | 56 | 113 | 189 | 34 | 392 |
| P & PD | 18 | 24 | 38 | 4 | 85 |
| Finance & Accounts | 5 | 10 | 23 | 1 | 39 |
| Training | 2 | 1 | 5 | 1 | 9 |
| GRAND TOTAL | 195 | 551 | 1144 | 142 | 2032 |

1.3 Inservice Training

Three Refresher Training Programmes were conducted for the Ministerial Supervisory Personnel in which there were classes on topics such as Administrative Procedure in general, Control over general state of work, enforcement of the Rubber Act & Rules and the Conduct Rules, CCS Rules on Pension, Leave, GPF etc. Central Accounting System, Preparation of Budget, Application of FR, SR, GFR etc. various schemes of the Board including the World Bank Scheme, Marketing of rubber in different grades, Industrial application of rubber, Labour Welfare Schemes and the Research activities.

The training programmes for Asst.Secretaries was from 23-11-1993 to 26-11-1993 in which there were 11 participants. The course for Administrative Officers was from 11-10-1993 to 13-10-1993 in which 25 persons participated. The course for Section Officers/Asst.Section Officers was from 18-10-1993 to 22-10-1993 in which 67 persons participated.

2 Excise Duty

The Rubber Board has been entrusted with the responsibility of assessing and collecting the duty of excise (cess) on all rubber produced in India under Section 12 of the Rubber Act, 1947. The cess is collected on the quantity of rubber purchased or otherwise acquired by the rubber manufacturers.

Every manufacturer has to obtain a licence from the Board to acquire natural rubber, and is bound to give monthly and half yearly returns showing the quantity of rubber acquired and consumed. It is on the basis of the purchases reported in their half yearly returns that assessment of cess is made. Issuance of licence to the manufacturers to acquire rubber and assessment, collection of cess and remittance of the amount to the Consolidated Fund of India were undertaken properly. Details are given below.

2.1 Issuance of licence

(a) Issuance of licence for the year 1993-94

The function of issue of licences include the work of issue of new licences to prospective manufacturing units and renewal of licences of the existing manufacturers for the subsequent years. The details of licences issued during 1993-94 are furnished below:-

| | |
|---|---|
| Fresh licences | 525 Nos. |
| Renewal of licences | 4834 " |
| Total | 5359 Nos. |

During the period, licences in respect of four manufacturers were suspended owing to serious irregularities and malpractices detected in their business. Besides, based on requests received licences of 9 units were cancelled. Thus, the total number of licenced manufacturers at the end of 31-3-1994 was 5346. The statewise distribution of licensed manufacturers as at the end of 31st March, 1994 is given below:

| Sl.No. | Name of the State/Union Territory | No.of Units |
|---|---|---|
| -1 | Kerala | 891 |
| -2 | Maharashtra | 592 |
| -3 | Tamil Nadu | 561 |
| -4 | Punjab | 551 |
| -5 | West Bengal | 516 |
| -6 | Uttar Pradesh | 485 |
| -7 | Gujarat | 361 |
| -8 | Delhi | 360 |
| -9 | Haryana | 265 |
| 10 | Karnataka | 249 |
| 11 | Andhra Pradesh | 172 |
| 12 | Madhya Pradesh | 98 |

| | | |
|---|---|---|
| 13 | Rajasthan | 86 |
| 14 | Bihar | 40 |
| 15 | Pondicherry | 30 |
| 16 | Chandigarh | 22 |
| 17 | Goa | 19 |
| 18 | Orissa | 17 |
| 19 | Himachal Pradesh | 11 |
| 20 | Daman | 7 |
| 21 | Jammu & Kashmir | 5 |
| 22 | Assam | 3 |
| 23 | Tripura | 2 |
| 24 | Sikkim | 1 |
| 25 | Manipur | 1 |
| 26 | Dadra & Nagerhaveli | 1 |
| | Total | 5346 |

Also issued 3725 single year licences (25 to new manufacturing units and 3700 to the existing units).

2.2 Letters of authorisation

The Board registered 1378 letters of authorisation of various manufacturers in favour of dealers to purchase and despatch rubber on their behalf.

2.3 Registration of Branch/Purchase Depot

On the basis of the applications received from the manufacturers, 6 new branches/purchase depots were registered.

2.4 Letter of authorisation to purchase rubber

Apart from the regular licences, special authorisations to 12 organisations/institutions to acquire rubber for experimental purpose were issued, after collecting the cess amount in advance.

2.5 Assessment of duty of Excise (Cess) on rubber

During the financial year 1993-94, 10,675 half-yearly returns were obtained from various rubber goods manufacturers and sole crepe producers. Random checking and routine inspections were made in the premises of 2231 manufacturers. On the basis of the inspection reports cross checking of monthly returns of dealers and manufacturers was made which resulted in additional assessment in 231 cases for a quantity of 1249 tonnes of rubber involving a cess amount of Rs.6.25 lakh.

The total amount of cess assessed during the period was Rs.19.74 crores.

2.6 Collection of duty of excise (cess) on rubber

The cess on rubber collected during the period was ₹.19.82 crores. When compared to the last year, cess collection registered an increase of 10%. It is also worth mentioning that the cess collection has more than doubled over the last seven years. After adjusting a sum of ₹.40 lakh towards cost of collection, the balance was remitted to Central Bank of India for credit to the Consolidated Fund of India.

The efforts put in by the Arrear Clearance Cell helped in recovering arrears of cess on rubber to the tune of ₹.39.19 lakh in 327 cases. Arrears of cess involved in 247 cases amounting to ₹.41.3 lakh was reported for revenue recovery during the period and a sum of ₹.22.02 lakh was collected through the various revenue authorities.

2.7 Miscellaneous

During 1993-94, interest on belated payment of cess was collected to the tune of ₹.5.95 lakh. Moreover, a sum of ₹.11.15 lakh was collected towards licence fee and service charge and sales proceeds of the manufacturers list.

3 Market Intelligence

The market intelligence functions comprise of detection of bogus/unlicensed dealings in rubber, surprise inspection of the business premises of dealers for verification of their books of accounts for correctness of the accountings and for verification of physical stock, and cross verification of statutory returns filed by dealers/manufacturers and processors for ascertaining the correctness of the quantity of rubber acquired, to prevent evasion of cess on rubber. Inspections for ascertaining the suitability of the applicants for licences to deal in rubber, registration of branches of the dealers and approval of new/additional premises were also conducted.

The activities are briefly narrated below:-

3.1 Inspection and verifications

A total of 2575 inspections were conducted as detailed below:-

| | | |
|---|---|---|
| a) | No.of inspections in connection with the issue of dealers' licences (fresh/renewal) | 1656 |
| b) | Number of inspections in connection with the shifting of business premises of dealers and registration of their branch/ godown | 261 |

| | | |
|---|---|---|
| c) | Number of surprise inspections at the business premises of licensed dealers for verification of the books of accounts and records | 432 |
| d) | Detailed verification of accounts and records of dealers and processors at the office | 33 |
| e) | Detection of unlicensed dealings in rubber | 93 |
| | Total | 2575 |

3.2 Detection of irregular transactions/cross checking of returns/Form 'N' declarations

With a view to curtail bogus transactions and detect bogus dealers, timely watching the receipt and scrutiny of Form N declarations and connected returns were undertaken. As a result, suspicious transactions of certain dealers and manufacturers could be detected in time and loss of revenue to the Board and Government could be prevented. Based on the irregularities/malpractices detected, the licences of 6 dealers and one manufacturer were suspended. Bank guarantees furnished by 5 delinquent dealers totalling Rs.65,000/- were forfeited. Besides, details collected on the unaccounted purchase of 214,320 kg. of rubber of a manufacturer in Delhi were helpful in making assessment and collection of the cess on the quantum.

Purchase of abnormal quantity of rubber, over and above the licensed quantity by 2 manufacturers, one in Punjab and the other in Delhi was detected and steps were taken to restrain such practices.

Cross checking of monthly returns/form N declarations of 111 dealers and 62 manufacturers with those of their suppliers/purchasers were carried out and detection of unaccounted transactions resulted in collection of Rs.10.82 lakh.

3.3 Functioning of check-posts

The surveillance exercised through the 3 checkposts at Walayar, Manjeswaram and Kavalkinar supplemented by inspections of the Market Intelligence Inspectors helped in detecting a lot of malpractices.

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3.4 Printing and supply of declaration forms for interstate transport of rubber

A total of 16,000 books of declaration forms under different categories (form N1, N2, N3 and N4) were got printed. Estates, processors, dealers and manufacturers were supplied 13,145 Nos. Form N books, following which 50,730 copies of Form N declarations received were scrutinised. Wherever discrepancies were noticed, explanations/clarifications were called for.

As per the daily statements, received from checkpost Walayar, Manjeswaram and Kavalkinar, 43,796 consignments of rubber passed through the 3 checkposts during the period under report. The documents accompanying the consignments were scrutinised and in doubtful cases, cross-verified with the concerned returns. Breakdown of the consignments which passed through the three checkposts is given below:-

| Name of Checkpost | No.of consignment |
|---|---|
| Walayar, Palakkad Dist. | 32,838 |
| Manjeswaram, Kasargod | 5,420 |
| Kavalkinar, Nagercoil | 5,538 |
| Total | 43,796 |

4 Licensing of dealers

The strength of rubber dealers was 7135 at the beginning of 1993-94 which rose to 7509 at the close of the year. At the same time, the number of licensed processors fell to 144 from 147.

4.1 Dealers Licence

During the year 2,217 dealers licence were issued including 1170 new licences. Of these 1290 were for one year with validity upto 31-3-1994 (1168 fresh licences and 122 renewal cases), 34 were for a duration of 2 years with validity upto 31-3-1995 and 893 licences for 3 years with validity upto 31-3-1996 (2 fresh licence and 891 renewal cases). There were 2 short period licences issued for the year 1993-94.

In addition 1201 licences were renewed with validity from 1-4-1994. Of these 78 were for the year 1994-95, 26 for the years 1994-96 and 1097 for the years 1994-97. So also 69 new licences were granted during the month of March 1994 valid for 1994-95.

4.2 Statewise distribution of dealers and processors having valid licence during 1993-94.

| Sl. No. | Name of State | No. of dealers | No. of processors |
|---|---|---|---|
| 1 | Kerala * | 6480 | 120 |
| 2 | Tamil Nadu | 204 | 14 |
| 3 | Delhi | 172 | |
| 4 | Punjab | 170 | |
| 5 | West Bengal | 97 | |
| 6 | Uttar Pradesh | 82 | |
| 7 | Maharashtra | 76 | |
| 8 | Karnataka | 73 | 8 |
| 9 | Haryana | 44 | |
| 10 | Tripura | 33 | 1 |
| 11 | Gujarat | 26 | |
| 12 | Madhya Pradesh | 10 | |
| 13 | Rajasthan | 10 | |
| 14 | Assam | 7 | |
| 15 | Chandigarh | 7 | |
| 16 | Andaman and Nicobar | 4 | |
| 17 | Meghalaya | 4 | |
| 18 | Bihar | 3 | |
| 19 | Andhra Pradesh | 3 | 1 |
| 20 | Orissa | 2 | |
| 21 | Goa, Daman & Diu | 1 | |
| 22 | Jammu & Kashmir | 1 | |
| | Total | 7509 | 144 |

* District wise distribution of Kerala based licensed dealers

| | |
|---|---|
| Alappuzha | 58 |
| Ernakulam | 912 |
| Idukki | 362 |
| Kannur | 327 |
| Kasargode | 62 |
| Kollam | 751 |
| Kottayam | 1969 |
| Kozhikode | 161 |
| Malappuram | 224 |
| Palakkad | 169 |
| Pathanamthitta | 829 |
| Thiruvananthapuram | 500 |
| Thrissur | 107 |
| Wyanad | 49 |
| Total | 6480 |

4.3 Suspension/Revocation/Cancellation of Dealers Licence

During the year 8 licences were suspended on detecting serious irregularities. Due to death of licencees and on the basis of receipt of specific requests 91 valid licences and 2 branch registrations were cancelled. So also registration of 717 dealers who failed to apply for renewal of licence were cancelled and deleted from the Board's records.

4.4 Processors Licence

During the period under report 36 processors licences were granted, of which 10 were fresh cases. Besides 26 licence were renewed with validity from 1-4-94. As on 31-3-94 there were 144 licenced processors all over the country.

4.5 Registration of Branches

During the year 288 branches of the dealer and processors were registered. As on 31-3-94 there were 715 branches of the dealers and processors having valid registration including the registrations granted prior to 1993-94 as against 621 registered branches as on 31-3-93. Also registered 64 branches for 1994-95, 1994-96 and 1994-97 in February and March 1994.

4.6 Registration of agents for dealers and processors

Based on letter of authorisation received from dealers/processors, 482 agencies were registered to purchase rubber on commission basis. As on 31-3-94, there were 706 registered agents, inclusive of 224 already registered in March '93 valid for the year 1993-94 as against 596 registered agents during 1992-93, 288 agencies were also registered in March '94 valid for the year 1994-95.

4.7 Shifting of business premises

On the basis of applications received from the dealers changes in respect of 255 place of business/ storage were approved.

4.8 Change of constitution of firm

Changes in the constitution of 43 firms were approved during the period under report.

4.9 Collection of cess on rubber from dealers and forfeiture of Bank Guarantee

An amount of Rs.1,44,360/- was collected from dealers towards cess on rubber and bank guarantee worth Rs.65,000/- was forfeited for unlawful trade practice/ violation of the conditions of the licence issued.

4.10 Collection of pending returns

Since it was noticed that dealers and processors are not filing statutory returns in time, while inviting application for renewal of licence, they were required to file a declaration regarding submission of returns. Simultaneously return position of all the dealers whose licenses were to be renewed beyond 31-3-94 was checked to ascertain the correctness of the declarations. About 50% of the dealers were found to have filed false declaration regarding submission of returns. They were issued show cause notices against cancellation of licence and asked to file all pending returns with explanation. Consequent on this 9051 numbers of pending returns were collected as against 3121 during 1992-93.

5 Marketing and Price Collection

During the period under report provided marketing support to six Trading Companies on procurement of latex/ sheet/scrap rubber. The latex collection centres run by these companies were periodically visited and advised them about measures for efficient management.

The Processing Companies promoted jointly by the Rubber Board and the Rubber Producers Societies were also given marketing support in selling their produce, especially at a time when there was demand recession.

5.1 Price collection & monitoring

During the reporting period collected and compiled prices of different grades of natural rubber and reported to the Press for publication [illegible] / besides transmitting them on a daily basis / Daily average price of RMA-4 and ungrades prices, weekly price of all grades of rubber, monthly average price of sheet rubber, weekly average price of concentrated latex, daily price of different grades of rubber in the International market, etc. were also collected as part of the market monitoring function.

o the
inistry.

5.2 Export of natural rubber

With the removal of the restrications on the export of NR, a lot of export enquiries were received, in response to which the correct procedure was supplied. Consignments for exports were inspected for quality assurance and certified. Also assisted the exporters in identifying source of supply of the specific grade of NR for executing their export orders. Enquiries received from abroad for rubber export were copied and circulated among the plantation companies and processors of NR.

5.3 Natural rubber subsidy

Continued to compile NR subsidy allowable to the exporters of rubber goods for the period under report and intimated the same to the Ministry of Commerce, CAPEXIL, Sports Goods Export Promotion Council and various Offices of the Controller of Imports and Exports.

5.4 Publication of rubber goods manufacturers directory.

Brought out the third edition of the Directory of Rubber Goods Manufacturers in India, a voluminous publication in over 620 pages. The Directory was made more informative through addition of data and write ups.

5.5 Training, quality improvement programmes

Conducted training class for collection agents, representatives of Rubber Producers Societies and Co-operative Societies on sheet grading, processing and latex collection. Classes were also arranged for imparting training to representatives of societies and the public in latex preservation, processing etc. A total of 109 persons were trained.

Visited 84 latex collection centres for assisting them in latex collection, DRC estimation, payment to the participating growers, ammoniation of latex for preservation and eventual centrifugation etc.

6 Publication and Publicity

Circulation of 'Rubber', the Malayalam monthly of the Board recorded an average number of 13,300 copies a month during the period under report. The scheme for enrolling life membership was continued and 164 new subscribers for life membership were enrolled. The total number under this category touched 4441. Also brought out leaflets on various aspects of rubber cultivation. Sale of the publications 'Rubber - Vithu Muthal Vipani Vare' and 'Rubber Enna Kalpadhenu' was continued. Twelve issues of the Rubber Statistical News, each with 600 copies were brought out and sent to subscribers.

A total of 6,500 copies of 'Rubber Growers Companion-1994' (Delux-250, with text - 3500 and without text - 2750) and 500 copies of the 'Rubber and its cultivation' were brought out during the end of December 1993 and distributed.

6.1 Press releases, Farm features and Advertisements

Press hand outs on various topics were released to the national as well as local dailies which secured wide coverage. A total of 24 press releases and 52 advertisements were issued. Write ups on different aspects of rubber cultivation and processing were prepared (30) and issued to 'Karshikarangam' pages of the Malayalam dailies, which were promptly published.

6.2 Exhibitions and Seminars

During the period under report, 11 exhibitions were arranged at various places and the seminars conducted in different rubber growing tracts were made a medium to transfer technology in rubber farming to the village level rubber producers.

6.3 Broadcasting of calender of operations

In association with AIR, Thrissur broadcasted over the Air, Calender of operations in systematic rubber cultivation for each month.

6.4 Other activities

Used all channels of communications in popularising the activities of the Board. Both Doordarshan and Akashavani could be brought into the field to cover important functions and activities to highlight the farming operations and the achievements of the Board in various areas. Could also establish rapport with the Malayalam dailies to ensure proper acceptance and coverage of the programmes of the Board including /farm feature service.

7 Labour Welfare

Section 8(2-f) of the Rubber Act 1947 provides that the Board may promote by such measures to secure better working conditions and the provisions for the improvement of amenities and incentives for workers.

In compliance with this, implemented eleven labour welfare schemes during the financial year 1993-94. An amount of Rs.66,17,928/- was spent in implementing the schemes.

(a) Educational Stipend Scheme

The scheme provides for the payment of stipend to children of rubber plantation workers for undertaking courses in Arts, Science, Commerce, Engineering, Agriculture and Medicine. The stipend consists of tuition fee, Hostel/Boarding fee and lumpsum grant for the purchase of books, instruments etc. A total number of 10,998 applications were received of which 9045 were paid benefit of the scheme. Applications numbering 1250 were cancelled and 703 were pending for want of compliance of formalities in accordance with the scheme. The amount paid under the scheme was Rs.15,57,553.

(b) Educational Scholarship Scheme

The scheme provides for grant of scholarship ranging from Rs.250/- to Rs.2,000/- to children of rubber plantation workers who have availed stipend under the Educational Stipend Scheme on their meritoriously passing the academic courses. A total number of 174 applications were received of which 127 were extended the assistance, 19 were cancelled and 28 were pending for want of compliance of necessary formalities of the scheme. All the eligible cases were paid scholarship during the financial year itself.

(c) Medical Attendance Scheme

It provides for reimbursement of medical expenditure incurred by workers. The scheme also provides for the payment of compensation in lieu of workers' inability to attend duty in consequence of illness. The scheme applies only to workers employed in estates not governed by the provisions of the Plantations Labour Act 1951. A total number of 484 applications were received of which 207 were paid assistance, 32 cancelled and 238 were pending for want of funds. The amount paid under this scheme was Rs.1,76,089/-.

(d) Group Insurance-cum-Deposit Scheme (5 Schemes)

These schemes provide for payment of compensation to workers employed in estates not governed by the provisions of the Plantations Labour Act 1951 against death/injuries by accidents. It also encourages a habit of saving among the workers. The first phase of the scheme was started from the financial year 1986-87, the second phase during 1990-91, the third phase during 1991-92, the fourth phase during 1992-93 and the fifth phase from the financial year 1993-94. These separate schemes will be in operation for a period of ten years from the beginning. The total number of workers newly enrolled and those who renewed membership during the year was 5,312. An amount of Rs.5,31,200/- was remitted in favour of workers towards Board's share. An amount of Rs.46,370 was paid by the insurance company to 30 workers as accident/death compensation.

(e) Housing Subsidy Scheme (Unorganised Sector)

The scheme intends to promote construction of houses by workers employed in estates not covered by the Plantations Labour Act 1951. A worker constructing his own house with plinth area ranging from 20 sq.m to 70 sq.m at an estimated cost not exceeding Rs.80,000/- will be entitled to the grant of subsidy amounting to a maximum of Rs.7,500/- or 25% of the estimated cost whichever is less. The subsidy is released when the construction reaches lintel level. A total of 1,738 applications were received during the year. An amount of Rs.21,99,570 was paid to 385 workers and 78 sanctioned cases are pending for payment for want of funds. Applications numbering 312 which did not fall within the scheme, were cancelled. The remaining 963 cases are likely to be extended the assistance during the ensuing financial year.

(f) Housing Subsidy Scheme (Organised Sector)

The scheme provides for financial assistance to rubber plantation workers employed in estates governed by the Plantations Labour Act 1961 for constructing their own houses. The assistance rendered amounts to a maximum of Rs.6,000/- or 25% of the estimated cost of the house whichever is less. A total number of 273 applications were received during the year. An amount of Rs.9,36,000/- was paid to 161 workers. Applications which did not fall with the Scheme (27) were cancelled. The remaining 85 cases are likely to be paid the assistance during the ensuing financial year.

(g) Scheme for providing sanitary facilities

This is a new scheme implemented during 1993-94. The scheme intends to improve the hygienic conditions of the workers in the unorganised sector. It provides grant of assistance to workers constructing latrine as per prescribed plan and estimates. A total number of 1734 applications were received during the year. An amount of Rs.11,78,916/- was paid to 393 workers after cancelling 196 applications. The remaining 1145 cases are likely to be processed during 1994-95.

8 Internal Audit

The main function involved is inspection/audit of the various Offices/Units to ensure that rules and regulations are complied with. During the period under report internal audit/inspection was conducted in 59 Offices/Units out of 101 covering 59% Offices/Units.

Replies to the AG's Audit objections were sent in time and 36 paras have been got dropped out of the 124 paras. Review of Attendance Register as a measure of enforcement of punctuality in attendance was also undertaken. Referred cases including payment of pension and gratuity, leave encashment, pay fixation, service verification etc. were examined with reference to Rules and Government Orders thoroughly and endorsements were given.

Economy in the use and maintenance of vehicles and consumption of fuel was ensured by follow-up of procedures and Government orders strictly. Annual physical verification of stock was brought up-to-date. Unserviceable items were disposed off. The unsettled and outstanding contingent TA/LTC advances were eliminated by strict enforcement of rules of drawal of advances.

Audit by AG, Kerala for the year 1992-93 was also conducted in July/September 1993 and reports obtained were duly processed. Replies from various Departments were collected and consolidated replies were furnished. Besides, the AG, Kerala commenced Review Audit for the period 1988 to 1992 in February 1994 and all assistance were provided to them.

9 Legal matters

During the year under report timely action/advice rendered in 939 files. In 53 applications for House Building Advances, scrutinised documents for determining the eligibility of applicants under Rules. Legal

documents to be executed by the Board during the year under report were drafted/prepared as and when required. Appropriate steps were taken through lawyers to safeguard the interest of the Board in 75 litigations pending in various courts. Parawise comments and necessary instructions were given to Standing Counsels of the Board and the Central Government pleaders in cases pending in the High Court. In 20 consumer disputes filed before Redressal Forums in various districts, prepared and filed replies and represented the Board during the hearing.

Necessary assistance was given to RRDS, Andamans, Central Experiment Station, Chethackal, RRII Farm, HBSS at Nettana and Paraliar, Nurseries/Farms of the RP Departments etc. in dealing with labour matters. The papers required for examination by the Parliament Committee on various statutory matters were prepared, as also draft amendments proposed by the Board to Rubber Act, Rubber Rules, Rubber Board Employees Conduct Rules and Rubber Board Service (Classification, Control and Appeal) Rules.

## 10 Vigilance

### 1. Complaints

During the year under report took up for enquiry/verification 12 complaints containing allegations against 3 officers of Group B status and 9 employees of Group C & D status. The allegations mainly related to failure to maintain integrity and devotion to duty, misuse of official position for personal benefits, cheating of public, neglect of duty under the influence of liquor/intoxication of drinks, dereliction of check post duties resulting in smuggling of rubber causing financial loss to the Board, recommendation of housing subsidy under the Labour Welfare Scheme to ineligible persons, habitual unauthorised absence causing disruptions to the office functioning, failure to comply with the instructions of superiors/senior officers etc.. Necessary enquiries were caused into these complaints and appropriate action taken against the erring/unscrupulous officials.

### 2. Cases

Major penalty proceedings against 3 Board's employees and minor penalty action against 6 employees were initiated during the year under report.

### 3. Property statements and acquisition/disposal of immovable/movable property

Annual statements of immovable property as on 31-12-1993 were called for from all officers of Group A & B status. The statements thus received have been

scrutinised. 127 applications of the employees pertaining to sanction for acquisition/disposal of immovable property and 47 applications/intimations concerning transactions in movable properties such as two wheelers, motor cars, regrigerators, washing machines, televisions etc. were processed/dealt with during the year under report.

Disciplinary Cases

Ordered - 9
Disposed - 9

11 Implementation of Official Language

1. Official Language Implementation Committee

Two meetings of the Official Language Implementation Committee were held during the year.

2. Hindi Workshop

Twenty Hindi Workshops were conducted in the Regional Offices at Nagercoil, Trivandrum, Punalur, Pathanamthitta, Adoor, Changanacherry, Kottayam, Palai, Erattupetta, Muvattupuzha, Thodupuzha, Kothamangalam, Ernakulam, Thrissur, Nilambur, Palakkad, Kozhikode, Thalasserry, Taliparamba and Kanhangadu. Training in noting and drafting in Hindi, correspondence in Hindi etc. was given to the trainees. A state level Hindi Workshop was conducted at the VJT Hall, Trivandrum on 16th September 1993 under the auspices of the Rubber Board.

3. Hindi Week Celebration

Hindi Week was celebrated from 14th September 1993 in the Headquarters and Regional Offices. Competition in noting and drafting, elocution, translation, quiz, typewriting etc. were conducted for the employees of the Board and prizes were awarded to the winners. Competitions were also conducted for the children of the employees.

4. Official Language Conference

An Official Language Conference was conducted on 7th October 1993 at KPS Menon Auditorium, Kottayam.

5. Hindi Bulletin

Four issues of the Hindi Bulletin were published during the year.

6. Hindi Teaching Scheme

Hindi classes were conducted in the headquarters of the Board and RRII. A total number of 56 employees were trained during the year. Facilities for training Hindi through correspondence course was also arranged. Training in Hindi typewriting is being given to 12 employees of the Board.

12 Sub/Liaison Offices

There are 8 Sub Offices in the major consuming centres outside Kerala; at Ahmedabad, Bangalore, Bombay, Calcutta, Jullundar, Kanpur, Madras and New Delhi. These offices assess suitability of applicants to hold licence to deal in rubber or acquire rubber for rubber goods manufacture. The purchases made by the rubber manufacturers and the stock held by the rubber dealers were verified by the offices at random. The books of accounts and records of the licence holders were also verified to ensure that all rubber procured were brought to book for subjecting to assessment of cess. Surprise inspections were also conducted to detect unlicensed dealing in rubber and unlicensed manufacturing of rubber goods in contravention of the provisions of the Rubber Act and Rules.

Technical support was rendered from four of these offices through Junior Rubber Technologists posted there to the rubber manufacturing units in solving their problems in product manufacture. Problems which could not be solved by the local officials were referred to the Department of P&PD at Kottayam for examination and giving suitable advice to the manufacturers.

[redacted]

[redacted]

## VII. STATISTICS & PLANNING

### 1. General Statistics

Monitored supply, demand and price of rubber periodically and appropriate recommendations were furnished. During the period under report the Statistics & Import/Export Committee of the Board met on 29th July 1993 to review the demand and supply of rubber. The Rubber Board which met on 14-5-1993 and 10-8-93 also interalia reviewed the subject. Necessary statistical data for the meetings were prepared and supplied.

Continued to furnish relevant information to the various organisations connected with the rubber industry as in the previous periods. The statistical information required for publishing the 'Rubber Statistical News'(monthly) was prepared. This publication covers among other things details of production, consumption, import and stock position of natural,synthetic and reclaimed rubber and price of natural rubber.

Compiled tables for the 'Indian Rubber Statistics' Vol.20 (1993) using in-house computer facilities. The booklet was released in September 1993.

The statutory monthly returns collected from rubber growers, dealers, processors and manufacturers were compiled and analysed every month. The sample studies in small holding sector by field visits were continued in order to ascertain the monthly variation in production, stock etc.pertaining to small growers. The data collected from various sources were computed and production, consumption, import and stock of rubber were worked out on monthly basis. These details are presented in tables attached as part X of the report.

Materials were prepared for answering Parliament questions and Kerala Legislative Assembly questions pertaining to various aspects of the rubber industry. A comprehensive 'Note on Rubber' was prepared and forwarded to the Government.

The census work of rubber area initiated in March 1988 was continued during the year under report. The census work was guided and co-ordinated. Data pertaining to 145,332 small holdings were collected during the year and entrusted for computer processing. Data relating to the 1992-93 census were processed. A quick sample study was carried out to assess the number of trees at the time of felling etc, for which 1250 small holdings were covered. The average age of replanting was found to be around 25 years.

2. Planning

The project study on 'Policy Formulation and Perspectives for the Indian Natural Rubber Industry in a Changing National and International Context' initiated at the end of 1990-91 jointly by the Rubber Board and Economic & Social Institute(ESI), Free University, Amsterdam, under the Indo-Dutch Programme on Alternatives in Development(IDPAD) was completed in September 1993. Various details relating to the rubber industry were collected and supplied to the ESI. To transfer the technology developed by the ESI, two workshops were held, the first one at Ernakulam during April 1993(2 weeks) and the second one at Kottayam during September 1993 (1 week). Dr.Hidde P.Smit and Mr.Wouter Zant of ESI guided the workshop at Ernakulam while Mr.Wouter Zant and Mr.Kees Burger guided the workshop at Kottayam. The draft report on the project study was discussed on 11th September 1993 at RRII, Kottayam. Representatives of rubber growers, manufacturers and officials of Rubber Board participated in the discussion for finalising the report.

The Annual Plan for 1994-95 was prepared and forwarded to the Government.

3. Supply of information to world organisations

Continued to supply information to world organisations like the International Rubber Study Group(IRSG), UK and the Association of Natural Rubber Producing Countries(ANRPC), Malaysia. The Fifth Meeting of the ANRPC Committee on NR Statistics was held in Goa from 18th to 21st August 1993 under the auspices of the Rubber Board and it was attended by delegates from India, Indonesia, Malaysia, Singapore, Sri Lanka and Thailand. It reviewed the progress and development on

improvement of NR statistics in member countries, the status of implementation of recommendations of previous meetings. Cost of production, future demand and supply position etc. were also discussed during the meeting. The Sixth Meeting of this Committee was held in March 1994 in Thailand. The Jt.Director(S&P) represented India at the meeting.

The ANRPC convened a special meeting at Ministerial level in Bangkok, Thailand on 6th September 1993. The meeting was attended at Ministerial level from Malaysia, Thailand,Sri Lanka and Papua New Guinea. The Chairman, Rubber Board and Sri.C.A. Bhaskaran, Under Secretary, Ministry of Commerce represented India at the Ministerial level meeting as well as the senior official level meeting held prior to the Ministerial level meeting.

The ANRPC convened its 17th Assembly in Bali,Indonesia from 23 to 27 October 1993. It was attended by delegates from India, Indonesia, Malaysia, Papua New Guinea, Singapore, Sri Lanka and Thailand. The Chairman, Rubber Board represented India at the meeting. A special Emergency Group Meeting of IRSG was held in London on 16-17 June 1993. The Chairman, Rubber Board represented India at the meeting. Necessary brief for these meetings and assemblies were prepared and furnished by the Department.

4. International developments

Global production of natural rubber during 1993 was estimated by the International Rubber Study Group at 5.52 million tonnes as against 5.60 million tonnes during 1992. Production of Thailand, the world's largest producer during the year improved to 1.57 million tonnes from 1.53 million tonnes in the previous year. However, the Indonesian production during the year declined to 1.32 million tonnes from 1.39 million tonnes. Malaysian production also declined to 1.07 million tonnes from 1.17 million tonnes. The fall in production was mainly due to the fall in prices. The labour shortage also affected the Malaysian production significantly. World consumption of natural rubber during 1993 was estimated as 5.46 million tonnes as compared to 5.48 million tonnes during 1992. Projections of production and consumption for 1994 are 5.72 and 5.62 million tonnes respectively.

The Association of Natural Rubber Producing Countries(ANRPC) convened a special meeting at ministerial level in Bangkok on 6th September 1993. The meeting expressed serious concern at the continued low price of natural rubber and suggested that the structural imbalance between supply and demand may be corrected through appropriate long term production and marketing strategies on the part of the producing countries. Such a policy would not only help to sustain investment and reinvestment in the world NR industry, but would also facilitate introduction of innovative R&D measures for the orderly development of the rubber industry. While reviewing developments relating to the renegotiation of International Natural Rubber Agreement(INRA) 1987, the Ministers urged that the consultations taking place between producers and consumers should be intensified with a view to bring about a decision to renegotiate INRA 1987 as soon as possible. The INRA 1987 was to expire in December 1993.

The International Natural Rubber Organisation(INRO) at its council meeting held in November 1993 agreed to extend the INRA by one year. It was also decided to start renegotiations on a new price stabilisation accord to succeed the 1987 INRA.

The average price of RSS-3 grade rubber in Malaysia during 1993 declined to 207.5 Malaysian Ringgits(M.2538) per quintal from 212.6 Ringgits (M.2458) during 1992. The fall in price was mainly due to the poor demand for rubber. However, during the first quarter of 1994 price recorded a steady improvement and during March 1994 the average Malaysian price went up to 239.0 Ringgits (M.2758) per quintal. The contributing factor for the improvement in price are resumption of the buffer stocking operations and extension of the agreement for one more year, adverse weather conditions in the producing regions and the higher demand for NR from China.

5. World Bank Assisted Project

Prepared PERT/CPM charts indicating the targets to be achieved under the major activities under the World Bank Assisted Rubber Project. Preliminary steps were taken to organise a baseline survey on the status of small holders participating in the newplanting, replanting and productivity enhancement schemes from the social, technical and economic angles. A short list of

consultants was prepared for the work. Also prepared terms of reference for the survey, estimated cost, method of selection of sampling, size of samples to be selected etc. A draft questionnaire was also prepared indicating the particulars to be collected from the small holders. For assessing the performance of rubber small holdings(pilot plantations) in the non-traditional states of Karnataka, Assam, Meghalaya and Nagaland, a proforma was also designed. A note on commercial situation of rubber in India was prepared for furnishing to the World Bank supervisory mission. It indicates the major developments in the rubber field since the 'staff appraisal' study in 1990-91. The Jt.Director(S&P) also assisted the Project Co-ordination Unit in monitoring and evaluating progress under various schemes.

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VIII FINANCE & ACCOUNTS:

The main function in finance and accounts are the following:-

1 Prepare Annual Budget, Performance Budget, Foreign Exchange Budget etc and exercises budgetary control.

2 Maintain the accounts of the Board, prepare Annual Accounts, gets/same audited by the Accountant General Kerala and submit the audited accounts to the Rubber Board/Ministry/Parliament.

3 Place demands for grants from the Government from time to time, collect funds and distribute funds to various departments of the Board.

4 Advise financial propriety and regularity of transactions and on matters related to pay, service rules etc.

5 Assist the Cost Accounts Branch of the Ministry of Finance in ascertaining cost of production and in fixing price of Natural Rubber.

6 Prepare financial statements for project reports and schemes.

7 Deal with Central Income Tax, Agricultural Income Tax and Sales Tax matters relating to the activities of the Board.

8 Data processing using Computers in the field of financial accounting, pay roll and subsidy payment.

9 Implement various schemes for assistance to Co-operative Societies and RPSs.

Important activities during the year

1 Annual Accounts 1992-93

Statutory Annual Accounts of the Board for the year 1992-93 were prepared and given to AG Kerala within the stipulated time. The Audit Report and the Audited Accounts with the certificate were received from the AG Kerala and the same were forwarded to the Ministry for further action.

Prepared the Income & Expenditure Account and Balance Sheet for the period 1991-92 for the first time and handed over to AG Kerala. Also finalised the final accounts for the year 1992-93 namely Income & Expenditure Account and BalanceSheet for the year 1992-93 with the relevant schedules attached thereto and handed over to AG Kerala.

2 Funds Management

During the financial year 1993-94, funds amounting to Rs.33.83 crore have been received from the Government as budgetary support. This includes Rs.7.23 crore towards Foreign Aid to Rubber Board. The internal resources during the year was about Rs.3 crore. The total expenditure of the Board for the year was Rs.33 crore (provisional). The accumulations in the General Provident Fund and Pension Fund were invested to maximise the return. For the year 1993-94, the Board could declare interests on the GPF accumulations of the employees of the Rubber Board at 13% p.a.

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3 Revised Estimate 1993-94 and Budget Estimate 1994-95

The Revised Budget for 1993-94 and Budget Estimate for 1994-95 were prepared within the stipulated time limit and forwarded to the Govt. for approval. Budget sanctioned for the year 1993-94 both Plan & Non-Plan put together was Rs.36.67 crores. As against this, budget sanctioned for 1994-95 is Rs.46.60 crores including provision for implementation of the World Bank Scheme for Rubber Plantation Development (Rs.17.95 crores).

F&A Division of Administration Department

In addition to the routine functions/activities like preparation of Pay Bill, Processing Personal Claims, Processing of Payments & Receipts of interest bearing advances etc the division deals with the PF Account numbering about 2000 and payment of pension to 205 pensioners. Also deals with the centralised payment of Life Insurance Premium, Savings Linked Group Insurance, Income Tax and disbursement of subsidies to rubber plantation workers.

Cost Accounts Division

The Cost Accounts Division continued to collect cost data for furnishing to the Govt. and to ANRPC. Cost of raising rubber plantation in one hectare in different regions has been updated. Assisted the Cost Accounts Branch of the Ministry of Finance by furnishing details during October 1993, in the quick desk study for fixing benchmark price of RMA IV. Conducted study of cost of production of planting materials in the Board's nurseries for fixing selling price of planting materials.

Electronic Data Processing Division

Processed Pay Roll of above 1000 employees and handled the financial accounting for the year. Schedule of Fixed Assets of the Board, consolidated as well as division-wise for the financial year 1992-93 forming part of the Balance Sheet as on 31.3.1993 was prepared. For the purpose of revised budget, Nominal Rolls and for the purpose of payment of pension arrears, bank-wise statement of pensioners have been prepared.

Financial statements in respect of various Project Reports have been prepared during the year.

Schemes for financial assistance for processing

Financial assistance extended to the following schemes implemented during the year.

a) Assistance to RPSs for Smoke Houses
b) Assistance to RPSs for sheet and scrap collection
c) Assistance to RPSs for Latex Collection Centres
d) Assistance to RPSs for Group Processing Centres
e) Assistance to Cooperative Societies for establishing Processing Units.
f) Subsidy for generator
g) Additional share capital contribution to GAICO.

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## IX. TRAINING

1 Short-term training course on rubber culture and estate management.

One batch of this eighteen-day course was held for 13 participants from Kerala and Tamil Nadu from 13th Sept.to 6th October 1993.

2 Training course for rubber goods manufacturers

Separate courses were organised for rubber goods manufactured from latex as well as from dry forms of rubber during the period under report.

Five batches of the course on manufacture of products from latex (26.04.93 to 30.04.93; 21.06.93 to 25.06.93; 11.10.93 to 15.10.93; 31.01.94 to 04.02.94 and 21.03.94 to 25.03.94) were organised for a total number of 104 participants from the States of Andhra Pradesh, Assam, Gujarat, Karnataka and Kerala. Out of the 104, four represented scheduled caste/scheduled tribe for whom 50% fee concession was allowed.

Four batches of the eight-day course on manufacture of products from dry rubber were held (07.07.93 to 16.07.93; 25.10.93 to 03.11.93; 08.11.93 to 17.11.93 and 09.02.94 to 18.02.94) for 60 participants from Assam, Kerala, Madhya Pradesh, Tamil Nadu and Utter Pradesh.

3 Rubber Processing

One batch of this five-day course was conducted between 21st and 25th February 1994 for 23 participants from Kerala.

4 Production of latex thread

Two batches of this four-day course were held (30.04.93 to 02.04.93 and 25.05.93 to 28.05.93) during the period for seven manufacturers from Kerala and Maharashtra.

5 Production of balloon

Two batches of the course on production of balloon were organised (25.05.93 to 28.05.93 and 18.10.93 to 21.10.93) for ten participants from Assam, Kerala and Tamil Nadu.

6 Small-holders' training

One batch of this five-day course for nine small rubber growers was organised from 19th to 23rd April, 1993.

7 Production of rubber band

Four participants had undergone this three-day course during the period from 28th to 31st March, 1994.

8 Micron spraying

Six rubber growers took part in the one-day course held on 29th April,1993.

9 Mushroom culture

Three batches of this one-day course were held during the period (29.06.93; 18.01.94 and 29.03.94) under report for 68 participants from the State of Kerala.

10 Nursery practice

A one-day course on nursery management was held on 10th August 1993 for 16 small rubber growers.

11 Rubber sheet grading

One-day course on rubber sheet grading was arranged on 23rd June,1993 for four participants. Out of the four, three represented the Paravoor Cooperative Rubber Marketing Society, Kannur, to whom full fee concession was allowed.

COURSE ON SPECIALISED SUBJECTS ORGANISED ON REQUEST FROM GOVERNMENT DEPARTMENTS AND OTHER AGENCIES

1 Course on testing of raw materials and finished rubber products

One Laboratory Assistant from M/s.Paragon Rubber Industries, Kottayam had undergone training on testing of raw materials and finished rubber products, as related to production of hawai chappals, from 6th to 22nd September,1993.

2 Production of Hawai chappals

A three-day course on this was conducted for two manufacturers from Maharashtra between 6th and 8th December,1993.

3 Production of erasers

A three-day course on production of pencil erasers was held for a candidate from Kottayam District from 18th to 20th Aug.1993.

4 Training for Managers/Dy.Directors of Directorate of Industries

13 Managers/Dy.Directors of Directorate of Industries and Commerce had undergone two days training on specific areas such as raw materials for the rubber industry and testing of rubber and rubber products.

5 Two representatives of M/s.Tungabhadra Steel Products Ltd. Karnataka had undergone training on testing of physical and chemical testing of rubber products from 10th to 21st Jan.1994 and one representative from Directorate of Industries had undergone training on polymer identification and analysis of rubber products from 10th to 21st January,1994.

TRAINING PROGRAMME FOR INSERVICE PERSONNEL

1 Training for newly recruited Jr.Field Officers

Two batches of pre-entry training on familiarization on rubber were held for 22 newly recruited Jr.Field Officers from 02.05.93 to 11.06.93 and 04.01.94 to 13.01.94.

2 Refresher training for Rubber Tapping Demonstrators/Instructors.

Four batches of this training were held (06.09.93 to 10.09.93; 20.09.93 to 24.09.93; 08.11.93 to 12.11.93 and 06.12.93 to 10.12.93) for 51 Rubber Tapping Demonstrators/Instructors.

3 Refresher training for Security Guards

One Security Guard from Hevea Breeding Sub-Station, Nettana had undergone refresher training from 20th to 25th September,1993.

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PART - X

STATISTICAL TABLES

Table-1

PRODUCTION, IMPORT AND CONSUMPTION OF NATURAL RUBBER (Tonnes)

| Month | Production | Import* | Consumption (Indigenous & Imported) |
|---|---|---|---|
| April 1993 | 30,870 | 2,555 | 36,025 |
| May " | 34,845 | 3,838 | 35,875 |
| June " | 25,300 | 2,404 | 37,730 |
| July " | 26,295 | 3,231 | 38,270 |
| Aug. " | 35,150 | 2,681 | 36,650 |
| Sept. " | 46,450 | 2,761 | 34,380 |
| October " | 41,360 | 1,180 | 36,820 |
| November " | 47,475 | 584 | 38,200 |
| December " | 52,490 | 725 | 41,450 |
| January 1994 | 47,750 | 430 | 38,635 |
| February " | 22,090 | 137 | 38,160 |
| March " | 25,085 | 858 | 38,285 |
| TOTAL | 435,160 | 21,384 | 450,480 |

* Provisional

Table-2

STOCK OF NATURAL RUBBER AT THE END OF EACH MONTH

(Tonnes)

| Month | | Growers, dealers* and pro-cessors | Manufact-urers | Total (Rounded) |
|---|---|---|---|---|
| April | 1993 | 39,340 | 29,200 | 68,540 |
| May | " | 40,510 | 30,840 | 71,350 |
| June | " | 31,585 | 29,740 | 61,325 |
| July | " | 26,480 | 26,100 | 52,580 |
| August | " | 32,070 | 21,690 | 53,760 |
| September | " | 48,010 | 20,580 | 68,590 |
| October | " | 50,805 | 23,500 | 74,305 |
| November | " | 62,300 | 22,365 | 84,665 |
| December | " | 71,515 | 24,915 | 96,430 |
| January | 1994 | 77,370 | 28,540 | 105,910 |
| February | " | 56,865 | 33,045 | 89,910 |
| March | " | 42,125 | 34,890 | 77,015 |

* Including STC

Table-3

PRODUCTION, IMPORT AND CONSUMPTION OF SYNTHETIC RUBBER

(Tonnes)

| Month | Production* | Import* | Consumption |
|---|---|---|---|
| April 1993 | 4,025 | 6,364 | 9,095 |
| May " | 2,908 | 6,886 | 9,090 |
| June " | 3,814 | 6,198 | 9,415 |
| July " | 3,992 | 5,030 | 9,745 |
| August " | 3,022 | 4,178 | 9,110 |
| September " | 4,680 | 4,384 | 8,690 |
| October " | 2,812 | 3,959 | 9,130 |
| November " | 5,357 | 5,326 | 9,150 |
| December " | 5,344 | 5,282 | 9,650 |
| January 1994 | 5,700 | 4,728 | 8,900 |
| February " | 4,715 | 5,181 | 8,875 |
| March " | 2,476 | 5,484 | 9,045 |
| Total | 48,845 | 63,000 | 109,895 |

* Provisional

Table-4

PRODUCTION & CONSUMPTION OF RECLAIMED RUBBER

(Tonnes)

| Month | | Production* | Consumption |
|---|---|---|---|
| April | 1993 | 5,055 | 5,130 |
| May | " | 5,285 | 5,050 |
| June | " | 5,070 | 5,100 |
| July | " | 5,175 | 5,295 |
| August | " | 4,870 | 5,310 |
| September | " | 5,485 | 5,405 |
| October | " | 5,510 | 5,205 |
| November | " | 5,270 | 5,295 |
| December | " | 5,465 | 5,450 |
| January | 1994 | 5,315 | 5,340 |
| February | " | 5,040 | 5,310 |
| March | " | 5,240 | 5,220 |
| | Total | 62,780 | 63,110 |

* Indigenous purchase by manufacturers

ANNEXURE - I

LIST OF MEMBERS OF THE RUBBER BOARD AS ON 31.03.1994

| | | | |
|---|---|---|---|
| -1 | Smt J Lalithambika IAS | : Chairman, Rubber Board | |
| -2 | Shri MS Joseph<br>Agricultural Production Commissioner,<br>Govt. of Kerala,<br>Thiruvananthapuram. | Nominated by the Govt. of Kerala to represent that State. | |
| -3 | Major General PM Menon<br>Chairman,<br>Plantation Corporation of Kerala Ltd., Kottayam. | -do- | |
| -4 | Shri G Balan Samson<br>Managing Director<br>Arasu Rubber Corporation Ltd., Nagercoil,<br>Kanyakumari Dist.<br>Tamil Nadu. | Nominated by the Govt. of Tamil Nadu to represent them. | |
| -5 | Shri George John<br>Kailash Rubber Company Ltd<br>Ancheril Bank Building,<br>Kottayam, Kerala. | Elected by the Large Growers in the State of Kerala. | |
| -6 | Shri MD Joseph,<br>Manniparampil,<br>Kanjirappally,<br>Kottayam, Kerala. | -do- | |
| -7 | Shri KJ Thomas Akkarakalam<br>Manager<br>South Indian Plantations Ltd., Devivilas Buildings<br>Jetty Road, Alappuzha,<br>Kerala. | -do- | |
| -8 | Shri PN Subramanion<br>Pioneer Nagamony Plantations, Town Junction,<br>Nagercoil,<br>Kanyakumari District. | Elected by the Large Growers in the State of Tamil Nadu. | |
| -9 | Shri Dwarka Nath Dass<br>Member of Parliament | Elected by Lok Sabha. | They will hold office upto 23rd December, 1994 or till the date on which they cease to be Member of Parliament, whichever is earlier. |
| 10 | Shri Ramesh Chennithala<br>Member of Parliament | | |
| 11 | Shri MM Jacob<br>Member of Parliament | Elected by Rajya Sabha | He will hold office upto 20th Jan.1997 or till the date on which he ceases to be Member of Parliament, whichever is earlier. |

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| 12 | Prof.KK Abraham<br>Kayathinkara, Palai,<br>Kerala. | Nominated by the Central Government to represent small growers of Kerala. |
| 13 | Shri K Joseph Monipally<br>General Secretary<br>Indian Rubber Growers<br>Association, Cochin. | -do- |
| 14 | Shri Kodumon Gopinathan Nair<br>President, National Federation<br>of Rubber Producers,<br>Kodumon East,<br>Pathanamthitta Dist.,Kerala. | -do- |
| 15 | Shri VK Modi<br>Vice Chairman & Mg.Director<br>M/s.Modi Rubber Ltd.<br>6/7, DDA Shopping Complex,<br>New Friends Colony,<br>New Delhi. | Nominated by the Central Government to represent rubber goods manufacturers. |
| 16 | Shri SA Shah<br>Partner,<br>Kantilal Chotalal & Company<br>KC Estate, Subhash Road,<br>Jogeshwar (East), Bombay. | -do- |
| 17 | Shri PV Sankaranarayanan<br>General Secretary<br>INTUC, Kerala Branch<br>Asha, Azchavattom,<br>Kozhikode (Kerala). | Nominated by the Central Government to represent Labour interests. |
| 18 | Shri PK Gopalan<br>General Secretary<br>Malabar Estate Workers Union<br>(INTUC) PO Meppadi<br>Wyanad District, Kerala. | -do- |
| 19 | Shri Tom Thomas<br>Secretary, Hind Mazdoor Sabha,<br>Ponkunnam, Kerala. | -do- |
| 20 | Shri PD George<br>Mundakayam<br>Kerala. | -do- |

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| 21 | Shri T Basheer, Ex.M.P<br>Thalekunnil, Kochar Road<br>Sasthamangalam PO<br>Thiruvananthapuram<br>Kerala. | Nominated by the Central Government to represent 'Other interests' |
| 22 | Shri Jacob Thomas<br>Kalapurackal House<br>Muttambalam<br>Kottayam Dist., Kerala. | -do- |
| 23 | Shri ET Varghese<br>President, Rubber Dealers Association, Kottayam. | -do- |
| 24 | Shri Ashok Bhattacharya<br>Jay Nagar<br>(Opp.Agartala Judicial Court), Agartala,<br>Tripura. | -do- |
| 25 | Shri PK Narayanan<br>Rubber Production-Commissioner,<br>Rubber Board, Kottayam. | (Ex-officio) |
| 26 | Vacant.<br>(Executive Director) | |

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