CHAPTER 7

CONCLUSIONS AND RECOMMENDATIONS

The development of Plantation crops is a predominant feature of Kerala agriculture. The price of natural rubber increased in the middle of 1990s and after 2003. Increase in price of natural rubber profoundly affects the income of the people in the rubber growing areas. Since natural rubber is cultivated as a monocrop in Kerala, the main agricultural income of rubber growers depends upon the price of natural rubber. The change in the price of natural rubber influences the spending habit of the people in the major rubber growing areas. Hence a study on the generation of surplus income and its appropriation in the plantation sector especially in the rubber growing areas of Kerala has much significance.

The main objectives of the study were:-

(i) To examine the trends in the area, production and yield of plantation crops in Kerala.

(ii) To examine the extent of surplus income generated among plantation farmers with reference to rubber growers.

(iii) To examine the trend in the utilisation of surplus income by the rubber growers.
(iv) To examine the progress made using the surplus income of rubber growers.

The study was based on the following hypotheses.

(i) The re-planting and new planting programmes in rubber plantation sector are to a great extent correlated with the price of the crop in international and national markets influencing the production targets.

(ii) The small and medium farmers in the rubber plantation sector have expended the surplus funds generated in meeting their needs related to the physical quality of life including consumer goods.

(iii) There are fluctuations in the prices of plantation crops in Kerala.

(iv) The booms and depressions in the rubber market affect the income generation of rubber growers influencing their standard of living.

Altogether there are seven chapters in the study. The first chapter analyses the growth of plantation crops in Kerala. The area, production and productivity of plantation crops are analysed here. The contributions of Kerala in the production of plantation crops in India are significant. Commodity boards have played a positive role
in the growth of area and productivity of plantation crops in Kerala. But their role in promoting processing and marketing facilities leaves a large room for improvement. Among the major plantation and other crops produced in the country natural rubber is the only crop which ranks first in the world in terms of its productivity. India has a comparative advantage in the production of natural rubber. Although India ranks fourth in the production of natural rubber in the world, her share of export of this commodity is less than 1 per cent.

In the second chapter area, production, and productivity of natural rubber were analysed at the international, national and state levels. The growth of rubber plantation industry in India is higher than any other rubber growing countries being 1\textsuperscript{st} in productivity, 4\textsuperscript{th} in production and 5\textsuperscript{th} in area. Unlike other rubber producing and consuming countries, in India the production and consumption of natural rubber is more or less balanced. Moreover, the share of natural rubber consumption is higher than that of synthetic rubber consumption. Similarly the analysis shows that the new plantation and re-plantation of natural rubber is closely associated with the price of natural rubber. Kerala state has more than 20 per cent of the total agricultural land under rubber and accounts for 92 per cent of the total rubber produced in the country. Natural rubber provides livelihood for more than 9 lakh rubber growers and more than 3 lakh
permanent workers in the state. The Rubber Board with its head office in Kottayam district of Kerala plays a very significant role in promoting the production and productivity of natural rubber in Kerala. Rubber producers' societies have played a crucial role in the upliftment of rubber growers in Kerala. The nature of market imperfection, which is a common feature of agricultural markets of Kerala is also analysed. This was examined with the help of the buying price and selling price of selected agricultural products. Similarly the value addition in rubber wood processing in India is not up to the mark compared to other rubber producing countries even though this industry has very high potential in Kerala.

The third chapter reviews literature on studies in respect of plantation crops in general and natural rubber in particular.

The fourth chapter is on the design of the study. The profile of the districts selected for the study is also included in this chapter.

In the fifth chapter, the surplus income generated in the rubber plantation sector is analysed. Rubber is a monocrop with the majority of rubber growers in Kerala. Moreover, the major share of agricultural income of rubber growers is from rubber. Hence the economic welfare of rubber growers depends upon the price of natural rubber.
Similarly, in the major rubber growing areas in Kerala, rubber is the predominant crop. Hence the momentum of all socio-economic activities in these areas revolve around the ups and downs of the price of natural rubber. The cost of maintaining rubber plantations shows a constantly increasing trend irrespective of the decrease in the price of its produce. The opportunity costs of different crops, which are cultivated in the major rubber growing areas, are also examined in this chapter. From the analysis it is seen that the surplus income generated in the rubber growing areas in 2003 is lower than the surplus income during the middle of 1990s.

The sixth chapter reviews the appropriation of surplus income in the rubber plantation sector. The surplus income generated in rubber growing areas was found expended in education, expansion of rubber cultivation, industry and business, costly consumer goods, and as a whole on improving living levels. Some farmers use a major share of their income for the re-payment of bank loans. It is also noted that the spending pattern in 2003 is different from the pattern during the middle of 1990s. The seventh chapter is the conclusions and recommendation of the study.

**Conclusions**

1) Plantations are the outcome of the colonisation of the tropical areas by the metropolitan countries of Europe. These colonies
helped the spread of plantation crops. Suitable climate and cheap labour in these colonies favoured the growth of such plantations. In India this growth in the Plantation sector was a part of colonial exploitation of British East India Company.

2) Plantation crops constitute more than 25 per cent of the cropped area in Kerala. A major portion of these crops produced in India is from Kerala, i.e., 92 per cent of Rubber, 56.4 per cent of Cardamom, 24.4 per cent of Coffee and 8.4 per cent of Tea.

3) One peculiarity of plantation crops in Kerala is that they are mostly produced not for domestic consumption but for sale. So a major portion of the plantation crops produced in Kerala is exported to other regions.

4) Imports of tea in India increased from 13.4 million Kg. in the year 2000 to 16.6 million Kg. in the year 2001 and further increased to 21.9 million Kg. in the year 2002. The disturbing fact is that most of the countries are exporting tea to India at low prices.

5) The development of tea plantation industry in the early 1900's was mainly at the expense of coffee. The main relevance of tea industry in Kerala is that it is cultivated in areas with least possibility of other crops. If tea cultivation had not been introduced in Kerala, such land would have remained barren.
6) There are imperfections in agricultural marketing in Kerala. The range between the selling price and buying price of agricultural commodities is from 25 per cent to 150 per cent. Hence the farmers are not receiving a reasonable price for their produce in accordance with the selling price prevailing in the market. The market imperfections benefit only the trading community. It adversely affects the interests of farmers in Kerala.

7) India is the fourth largest producer of natural rubber, with a share of 9 per cent in the world. The production of natural rubber in India was 6.49 lakh MT in 2002-03, registering 2.9 per cent growth over the previous year. India is at the same time the fourth largest consumer of natural rubber in the world after China, USA and Japan. Indian rubber industry comprising 29 tyre manufacturing units and 250 medium scale and 5500 small scale units in the organized sector offers 35000 diversified products. But 95 per cent of these industries are located outside Kerala.

8) After 2000-01, the price of cardamom is showing a decreasing trend. Hence there exists a financial crisis among the growers in the plantation sector. This situation is similar to all plantation crops in Kerala. Natural rubber price is subject to wide fluctuations. There was sudden increase in 1994, decrease in
1998 and then again increase in 2003. The prices of tea and coffee also dropped at the end of 1990s. All these factors show that there is instability in the prices of plantation crops. Hence we accept the third hypothesis of the study that there are fluctuations in the prices of plantation crops.

9) The commodity boards (Rubber Board, Coffee Board, Tea Board, Cardamom Board and Spices Board) have played a positive role in enhancing the productivity of plantation crops in India. But assistance and supports provided by these Boards to the farmers with respect to processing and marketing is not up to the mark. The major share of expenditure is on production side only.

10) The direct permanent employment opportunities provided by the plantation sector is above 5 lakhs. The permanent employees of agricultural sector are found mainly in the plantation sector only.

11) After 2000, the liberalization of import of agricultural produces to India led to a decrease in the price of all plantation crops. In certain cases the price of imported commodities is cheaper than those of domestic goods. Hence these imported goods can easily compete with plantation crops of Kerala. Several tea estates in Kerala were closed down due to heavy loss leading to poverty and unemployment among tea plantation workers.
12) India has comparative advantage in the production of rubber compared to other agricultural crops. India occupies a prominent position in the area and production of several agricultural commodities. But rubber is the only agricultural crop in India which ranks first in the world in terms of productivity (Table 1.8). The productivity of natural rubber in Kerala is highest in India. Hence the production processing and export of natural rubber has great significance in Kerala economy.

13) Rubber is produced mainly in the developing countries of the world. But the consumption of natural rubber is more in developed countries. Hence there is an imbalance in the production and consumption of natural rubber. The three major natural rubber producing countries Thailand, Indonesia and India produce 64 percent of the total rubber produced in the world. On the other hand, the major rubber consuming countries are U.S.A. China, Japan, Korea, Germany and France.

14) The re-planting and new planting of natural rubber in India depends upon the price of rubber in Indian and international markets (table 2.6). When the price reached a peak in 1995-96 the impact of this peak price was reflected in the area under new plantations during 1996-97 and 1997-98. In the later years when the price came down, the area under new plantations also
declined. These trends establish that the price of natural rubber and the area under new plantations is directly associated. To strengthen the argument, correlation coefficient was worked and the value is 0.5. Hence we accept the first hypothesis of the study that new plantation and re-plantation of natural rubber depend upon the price of natural rubber in Indian and international markets.

15) The clones used in most of the rubber plantations in Kerala are RRR-105 developed by the Rubber Research Institute of India (table 2.7). This clone is found as a high yielding one compared to the other clones cultivated in rubber plantations.

16) A decline in the price of natural rubber led to a reduction in the care given to rubber trees in Kerala. The use of fertilizers, spraying practices, land improvement measures etc. all declined as a result of the fall in the price of rubber. This has led to total decline in the production of rubber.

17) The entire rubber produced in the country is consumed domestically (table 2.9). In other rubber producing countries the situations is different. For example major rubber producing countries viz. Thailand, Malaysia and Indonesia consume only a small portion of their production. Natural rubber is exported and imported in India (table 2.9). This is as a result of the
competition between the rubber growers and big industrialists in the country. Although Kerala state produces 92 per cent of the total production of natural rubber its consumption comes only to 15 per cent.

18) Rubber Producers' Societies (RPS) have made an impact in the rubber growing areas. RPS has also proved to be successful in inculcating a sense of unity among its members and once being united, and strengthened they feel strong enough to take up more important responsibilities.

19) Rubber wood is an important ancillary source of the income of rubber growers. This is an advantage of rubber plantation over other plantation crops as well as other agricultural crops in the country. Plantations like tea, coffee, pepper, cardamom etc. have no such source of income. Thailand and Malaysia maximise the returns from rubber wood by exploiting its demand in the world market. In 1995 there were 1289 rubber wood processing centres in Malaysia out of which 125 concentrated in the production of furniture. These furniture production units export 80 per cent of their products to countries like America, Japan, Singapore etc. In Malaysia there are rubber plantations which concentrate in the production of rubber wood only. Thailand is in high dominance in the production of particle board and furniture.
In India, the great potential of rubber wood processing is not effectively exploited. Most of the rubber wood produced in Kerala is used mainly for packing cases. Only 12 per cent of the rubber wood is chemically processed to make high value rubber wood.

19) The increase in the price of natural rubber, beyond a certain level will increase the production and consumption of synthetic rubber (Table 2.11). When the price of natural rubber was increasing the consumption of synthetic rubber increased. When the price of natural rubber was $765/100kg. (1949) the share of natural rubber consumption in the world was 67.34 percent of the total rubber consumption in the world. At that time the consumption of synthetic rubber was 32.66 per cent of the total rubber consumption in the world. But when the price of natural rubber increased to $3458 (1951), the percentage of consumption of synthetic rubber increased substantially. But the response of increase in the price of natural rubber cannot be reflected in the succeeding year itself. Starting and commissioning of Synthetic Rubber factories require huge investment and long gestation period. Once it is established such factories have to go on increasing its share of production facing competition from other factories at all levels. The unprecedented increase in the price of natural rubber in 1950 and 1951 was fully
exploited by the synthetic rubber industry in subsequent years. The share of synthetic rubber went on increasing to 60.44 per cent in 1965, 65.26 per cent in 1970 and 70.03 per cent in 1980.

20) The major agricultural crops in Kerala are regionally specialised. The majority of rubber growers in Kerala devote a major portion of their land for mono cropping of natural rubber. (tables 5.1, 5.2, 5.3, and 5.4). Hence the major share of agricultural income of rubber growers is from rubber. Consequently the booms and depressions in the rubber market will affect the standard of living of people in Kerala. This trend will be more obvious in the rubber growing areas of Kerala. Hence we accept the fourth hypothesis that the booms and depressions in the rubber market will affect the Income generation of rubber growers influencing their standard of living.

21) The income from agricultural crops which are cultivated in the major rubber growing areas is comparatively less than the income from rubber cultivation. The price of natural rubber above Rs.40/kg can be treated as surplus income considering the cost of maintaining rubber plantations.

22) There was surplus income in rubber plantations in Kerala during the period from 1994 to 1997 and from 2003 January. The surplus income during 1994 -97 was higher than the income in
2003 when comparing the cost of maintaining rubber plantations and money value.

23) The increase in the price of natural rubber in the Indian and international market led to an increase in cultivation of rubber in Kerala. Several rubber growers planted natural rubber in other states also. Hence the migration of farmers to non-traditional rubber growing areas was a direct impact of surplus income in rubber cultivation. This was the situation in the middle of 1990s. Such an impact is not reflected in 2003. The farmers are not expecting stability in the price of natural rubber. Hence such expenditure is not entertained.

24) The consumption expenditure of rubber growers has improved as a result of the rise in the price of natural rubber. This is reflected in the consumption of consumer goods such as computers, fridges, washing machines, cable TV, pump sets, land and mobile phone connections, costly furniture, kitchen ware, jewellery etc found in the houses of the rubber growers. The consumption pattern of rubber growers improved only after 1994 when the price of natural rubber increased to a marked extent. Hence we can say that a sizeable portion of the increased income of rubber growers are expended in the purchase of consumer goods. During early 1990s majority of the farmers were using
pulleys and buckets for drawing water. But for domestic use pump sets were used in place of pulleys and buckets. Moreover pump sets were also used for irrigation purposes. Eighty three per cent of the households constructed their own approach roads to their houses. Private hospitals sprang up in remote villages and the majority of the rubber growing families preferred private hospitals in the place of government primary health centres. Hence the development activities in the rubber growing areas have gone up due to increase in the price of natural rubber. Hence we accept the second hypothesis that the small and medium farmers in the rubber plantation sector have expended the surplus funds generated in meeting their needs related to the physical quality of life including consumer goods.

25) The surplus income in rubber plantations led to improvement in construction activities in general. Several shopping complexes, shops, places of worships etc. were constructed with the increase in the price of natural rubber. Hence several construction companies got developed as a consequence of the surplus income from the rubber plantation industry. But the construction activities during the years 2003 and 2004 were comparatively less than those in 1996.
26) The sale of vehicles in rubber growing areas has increased as a result of the increase in the price of natural rubber in Kerala. The indexes in the registration of new vehicles show that registration in Kottayam district is higher than the state average. During the early 1990s the range of difference of index at the state level and at Kottayam district level was small. But from 1994 onwards, the index in the purchase of vehicles in Kottayam district shows a very high increasing trend whereas at the state level the index shows a normal increase. After 1998 the index of Kottayam district shows only a normal increase. Hence we can say there is a direct relation between the price of natural rubber, surplus income in the hands of rubber growers and purchase of motor vehicle in the major rubber growing areas of Kerala.

27) The expenditure pattern of professional and technical education in the major rubber growing areas has changed substantially as and when there was surplus income from rubber plantations. Several farmers sent their children for higher education outside Kerala. The preferences of parents to send their children to unaided schools are comparatively higher. The increased income of farmers leads to the change in the schooling pattern of their children. Moreover, quite a good number of public schools were established in the major rubber growing areas. In the case of
lower primary education of children, 45 per cent of farmers prefer unaided schools to other schools. This is higher than the state average of 6.17 per cent. The same trend is followed in the case of upper primary schools and high schools. Two reasons are responsible for such a change. One is due to the general demonstration which tempts the parents to send their children to unaided schools like other classes of people. Another reason for the move towards unaided English Schools is that several farmers think that their educational backwardness was mainly due to the study in Malayalam medium schools. Hence they would like their children to study in English medium schools. This trend of schooling in un-aided schools is not reflected in the case of plus two classes. This is mainly due to two reasons. The first one is that the established unaided English medium plus two schools are only very few in Kerala. Many are in the developing stage. The second reason is related to the medium of instruction. In government, aided and unaided higher secondary schools, the medium of instruction is English.

28) The general standard of the workers in rubber plantations has improved due to hike in the price of natural rubber. This is reflected in improved wages, more employment opportunities,
use of advanced machinery, transportation facilities, smokehouses, water taps in work sheds etc.

29) The increase in the price of land led to a rise in the value of land in Kerala (table 6.4). This has made an improvement in the real estate business in the major rubber growing areas in Kerala. But when the price of natural rubber decreased the real estate business faced a decline and the value of land decreased. The increase in the price of land in the towns and nearby areas is much higher than those in the village areas. The relationship between the price of natural rubber and the price of land in the rubber growing areas can be established with the help of Spearman’s rank correlation between the two variables. The correlation is 0.93 and hence there exists high positive correlation between the price of natural rubber and the value of land in the rubber growing areas.

30) Several farmers have made long term investments in expectation of a stable price for natural rubber. But the decrease in the price of natural rubber in 1998 made these farmers unable to repay the loan with the prevailing income from rubber. Hence several rubber growers became bankrupt. The surplus income from rubber in 2003 led to an increase in re-payment of the agricultural loans taken by farmers. Even in bank deposits in the
primary co-operatives, there is a marked improvement when there is surplus income in rubber plantations.

31) The surplus income in rubber plantations attracted farmers of other sectors to the cultivation of rubber. The area of natural rubber is showing a constant upward trend whereas the area of paddy is showing a decreasing trend (table 6.5). Here the increase in the area of rubber decreases with the fall in the price of natural rubber. This is reflected in the change in the extent of area under rubber from 1998-99 onwards. The shift from paddy cultivation to cash crops is mainly due to surplus income in rubber plantations.

32) The surplus income from rubber diverted some farmers to industry and business. The savings in the form of insurance policies also has improved in the rubber growing areas. Since there is a boom in the rubber growing areas, the tourism sector has also improved.

7.2. A Few Suggestions.

In the study a detailed discussion is done regarding the plantation crops in general and rubber plantation in particular in Kerala. Here are certain suggestions for improving the present situation prevailing in the plantation field and for reducing the hardships of rubber growers in general. Kerala should take the lead
on major challenges of globalization. We must not miss the opportunities that the global system is offering. We have to blend our strengths in the agriculture, manufacturing and the service sectors for global competitiveness.

1. Plantation crops like rubber, tea, cardamom etc need protection from the import of cheap, low quality goods from other countries. All the existing regulations under the WTO should be invoked to put an end to such unhealthy practices and to safeguard the interests of our farmers.

2. Among the plantation crops, natural rubber is not included in the list of agricultural crops as per GATT agreement. Hence the first strategic intervention of the Government should be to bring natural rubber under the AoA.

3. The functioning of Commodity Boards especially Rubber Board should be reoriented. The interests of the farmers should be given due importance. The commodity boards should take necessary initiatives to bridge the gap between the farmer and commodity board. In Kerala’s case the average size of the cultivated land is 0.5 hectares. Even this plot is becoming smaller and smaller from year to year. Rubber Board has to address this problem with all seriousness and develop technologies suitable to the needs of the
small farmer. Commodity Boards also have to turn their attention to value addition and make the produces globally competitive.

4. In order to improve the quality of plantation produces, group-processing centres for value addition may be started in the major rubber growing areas. Cooperative Marketing Societies can play an important role in this area. When quality is assured by ISI, ISO certifications, marketing will be easy.

5. Rubber wood processing sector may be developed fully. At the time of replanting, one hectare plantation gives more than 200 cubic metres of rubber wood. Rubber wood is eco-friendly. It reduces strain on our depleting forests. But its use has not become popular. Out of the 600 farmers selected for the survey, none was found using furniture, doors, windows etc. made of rubber wood. In Kerala, rubber wood is used mostly as fire wood.

6. A stable price of natural rubber is advantageous not only for the rubber growers but also for rubber goods manufacturers. Buffer stock operations can keep the price of natural rubber at a reasonable level. This can be carried out with the co-operation of rubber growers, Rubber Producers Societies (RPS), Rubber Marketing Societies and the Rubber Board.

7. Smuggling of rubber to neighbouring state used to be a profitable business because of the differences in the tax structure.
The introduction of VAT in Kerala has significantly reduced this tendency. This system will benefit producers, consumers and all other stakeholders.

8. The progress of rubber based industries is not up to the mark in Kerala. Raw material is in plenty. Skilled and unskilled labour are cheap. The key challenges before us are: curtailing waste, optimum use of production capacity, quality consciousness and addressing WTO related issues to our advantage. There is much scope for further expansion and modernisation as there is tremendous potential on both the demand as well as supply side of the market.

9. There is an absence of interaction between rubber growers and rubber manufacturers. The rubber growers can get better price locally than from export. Manufacturers can at the same time purchase natural rubber at cheaper rates locally avoiding extra expenses on freight charges, local taxes, duty etc. The rubber growers should become aware of consumer needs and preferences. Lack of transparency is a great drawback. A very high price for natural rubber is not in the interests of the rubber grower. The price should not go up very high nor it should come down far below. At very high price manufacturers would turn to synthetic rubber as it would be cheap and profitable for them. The export-import policy
related to natural rubber has to be modified in a way which will assure a stable price to the farmers as well as manufactures.

10. Rubber growers should take the initiative to earn supplementary income from rubber plantations. Banana, Pineapple, medicinal plants and even bamboo can be grown as intercrop by proper planning in spacing. During the initial phase of rubber trees, there is wide scope for these crops. Moreover rubber plantation is an important source of honey. Although honey is produced from rubber plantations in Kerala, presently not even 5 per cent of the potential is realised.

11. From past experience, we are not in a position to expect a stable price for natural rubber in India. Several factors are responsible for this. Fluctuation in crude oil prices is an important factor. Similarly the demands supply mismatch can flare up the prices at any moment. Hence precautionary measures are to be taken to protect farmers from severe financial crisis when the price falls down. The welfare fund presently formed at Rubber Producers’ Society level cover only a few farmers. This fund could be made more effective by spreading the coverage of the entire farming community.

12. The small rubber growers are unaware of the trends in the price of natural rubber. Market information regarding the demand and supply position should be made available to the rubber
growers. Rubber Producers’ Societies (RPS) along with its major functions have to transform themselves as a village knowledge hub. This hub would serve as a central place for farmers to learn up-to-date market situation, latest agri-technologies and their applications. The farmer like the industrialist has to turn as the best in the world to compete with the best. Rural knowledge connectivity is as important as physical connectivity. India has much advanced in Information and Communication Technologies (ICT). The strength so gained can be profitably utilised to address the problems as an effective tool in agriculture. Delivery of up to date information using communication technology is sure to bring about much needed transparency in all activities connected with agriculture.

13. In several parts of Kerala, there is scarcity of skilled rubber tappers in rubber plantations. Farm income depends to a large extent on the skill in tapping operation, sheet processing and proper maintenance of rubber trees. Hence proper training should be given to rubber tappers and workers. Sufficient labour welfare measures have to be ensured for workers in rubber estates. Otherwise, in the future, sufficient skilled workers will not be available in the plantations of Kerala. The need of the hour is to
make agriculture a more attractive profession to the younger generation of farmers and plantation labourers.

14. The export import policy relating to natural rubber is neither in the interests of the farmer nor in the interests of the manufacturer. The present policies relating to procurement and buffer stock operations have to be suitably modified so as to rectify this anomalies.

15. The investment pattern of the rubber growers during the time of prosperity and surplus was unproductive and on undesired lines. There should also be safeguards against uncertainties like sudden fall in the price and decline in income. Many became bankrupt at the time of price fall. They had to sell their properties to pay back bank over dues. This should be a lessen to be learned.

16. Global production of natural rubber is estimated to be 9.5 Million tonnes in 5 years from the level of 8.63 Million tones in 2004. China’s economy is developing as fast as it can with a 10 per cent GDP growth. China’s rubber industry needs raw rubber from India. Similarly there is demand from the developed as well as developing country. In all likelihood the natural rubber price is expected to be around $2/Kg. we have to frame our policies taking into account all these situations.
17. Kerala farmer has become a role model in the field of natural rubber cultivation. He has succeeded in getting maximum yield for rubber. But there is a situation that new plantations are not coming up to the expected level to meet the rapidly growing demand from the internal as well as external market. Price was very low during 1997-98 discouraging new planting and replanting. The price increase from 2003 onwards also did not encourage replanting as there was expectation of a still higher price.

18. Rubber based industries are not coming up in Kerala even though 92% of the natural rubber produced in India is from this state. Crumb rubber is the semi processes from of natural rubber which is of great demand in the globalised market set up. Crumb rubber factories in the country especially in Kerala are absolute, with average production capacity of only 10 tonnes. In most of these factories there is no attempt to rich its full capacity. This increases cost of production and denying the farmer his due share of profit from the global market. Revitalization of the agricultural as well as industrial sector by public- private partnership in areas of technology, management, skills, infrastructure and resources can only change the existing situations.

19. Online trading and in other commodities has started operation in many parts of the country. But farmers in the rural areas are not
conversant with this new trading factor. This has to be popularised to the benefit of the farmer. Even though there is talk about liberal advance to farming sector this has not been the practice in actual field. When big house construction firms and builders and rich persons get housing loan and vehicle loan at 7 to 9 per cent interest the farmer is denied this benefit and he can avail a crop loan at 10 to 11 per cent interest only. And even this facility is not in his easy reach. He still has to depend on the local money-length for his immediate needs.

20. The Government may frame Farmer's insurance schemes for farmers. Policies may be formulated to face any economic crisis, due to fall in the price of agricultural crops. This may prevent the suicide tendency of farmers.

To conclude it can be said that the rubber growers get surplus income when there is a reasonable price for natural rubber. Some of the farmers did not profitably utilise this surplus, while some others made benefit out of this by wise investments in the expansion of their estates, in the professional education of their children etc. Globalization has opened opportunities. Farmers as well as manufacturers should take maximum benefit out of this.