

## **RUBBER & RUBBER PRODUCT INDUSRTY**

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### **1. INTRODUCTION**

Hevea rubber was introduced into Myanmar about 120 years ago. Planted area reached 9,900 acres in 1909 and Hevea was recognized as a suitable crop for cultivation in Myanmar. Since then the rubber planted area increased gradually, 72,000 acres in 1920, 115,000 acres in 1940 and 140,000 acres in 1960, then expanded rapidly to a peak of 220,000 acres in 1969. This sharp increase rubber area in the 1960s was due to the Rubber Project, established under the Agriculture and Rural Development Corporation in 1956. The objective of this project was to assist in replanting of low and unproductive old rubber and to encourage the planting of new areas with contemporary high-yielding cultivars. The project set up nurseries where imported new high-yielding clones and clonal seeds were propagated and the planting materials, in the form of clonal seedlings as well as buddings, were distributed to planters at subsidized costs. A total of 30,440 acres were planted with the planting materials of new cultivars distributed under this project from the years 1957-58 to 1966-67.

After 1970, rubber planted area decreased because of no replanting of felled area, lack of investment, low yielding prewar area were abandoned and some cases of land utilization for other business. State owned plantations were also established but it did not cope with the fall of private areas. So rubber planted area decreased.

Rubber industry was in the hands of private only up to 1962. After that some state owned estates were established and hence there were two types of ownership of rubber planting: state owned and private owned. Planting production, procurement and export of rubber was handled by private only up to 1955. In 1955 a rubber export corporation was formed and which purchased rubber with the weekly price based on Singapore price and exported. But rubber export licenses were issued to the pri-

vates in 1959 and the function of said rubber export corporation ceased. And so up to 1964, rubber purchase and export was handled by private again.

Rubber local procurement and distribution was started handled by Myanmar Agricultural Produce Trading (MAPT) and rubber export was handled by Myanmar Export & Import Corporation (MEIC), Ministry of Trade in 1964. In 1976 rubber procurement, distribution and export was authorised to Agriculture Corporation, Ministry of Agriculture and Forest.

## **2. REVIEW OF PAST PERFORMANCE**

With the change of the political situation in 1962, many rubber estates owned by both local citizens and foreigners were nationalized in the years 1964-1973. Thereafter, the rubber areas declined to 190,000-200,000 acres in the 1970s and 1980s. This was largely due to the loss of interest by the private sector planters who owned about 80% of the area. Such producers were reluctant to invest in replanting old rubber and plantation of new areas for a number of reasons including the fear of possible nationalization, the unavailability of planting materials and lack of financial incentives. From 1963-64 to 1988, the government had controlled the local rubber plantation industry through

- (i) direct ownership of production from government estates,
- (ii) procurement of rubber as the sole legal buyer,
- (iii) marketing of rubber both for export and for domestic consumption,
- (iv) distribution of the limited supplies of inputs, and
- (v) provision of occasional advice to rubber planters.

The government has long recognized the economic importance and the potential role of rubber in the country's economy, and rubber had been accorded the status of a priority crop in national development plans since 1979. Realizing this and the need both to replant rubber with high-yielding cultivars and to modernize the deteriorating rubber industry the government sought assistance from international organizations. This resulted in a two-phase Rubber Rehabilitation Project, implemented with credits from the International Development Association (IDA). Rubber Reha-

bilitation Project-Phase I with an IDA credit of US\$ 4.5 million and counterpart government contribution of Kyat 26.479 million was implemented from 1979-80 to 1984-85.

This planted 4,500 acres with new high-yielding cultivars, of which 2,235 acres were replantings old rubber and 2,265 acres were newplantings. Phase II was implemented from 1984-85 to 1992-93, with IDA credit of US\$ 10.48 million and government contribution of Kyat 28.262 million. The project successfully planted a total of 11,153 acres, which included 8,036 acres of replanting area and 3,117 acres of new planted area. However, the projects were limited to the state-owned plantations, excluding the private sector which constituted the majority of the industry.

UNDP supported the two projects in the form of technical assistance with UNDP providing the grant fund and FAO acting as executing agency of the projects. The two technical assistance project, with a combined grant value of US\$ 1.78 million, were implemented from 1979 to 1982 and from 1984 to 1987, and provided consultancy inputs staff training and some equipment. UNDP and FAO continued to provide assistance to the plantation crops industry through the Applied Research Centre for Perennial Crop Project (ARCPC project) which was implemented from 1991 to 1994 with a grant of US\$ 1.09 million. This project assisted in establishing a research centre, improving infrastructure, training of staff to acquire the technical and managerial capabilities needed to undertake applied research and providing extension support to small holders.

These projects have contributed considerably to the institutional and technical development of the government rubber sector by establishing the necessary supporting infrastructure and thus have laid a foundation for future participation by the private sector planters.

### **3. CURRENT SITUATION FOR RUBBER DEVELOPMENT**

#### **3.1.1. Changing Situation**

The political changes in 1988 brought about changes in the country's economic policy, notably the adoption of a market-oriented economic

policy. With this policy, many agricultural crops including rubber can be freely planted, produced and marketed without any restrictions. With a view to encouraging the development of agriculture and livestock breeding, improving production from these sectors, and also to make appropriate use of the country's vast areas of vacant, fallow and waste lands, the government is liberally allocating these lands for agricultural and livestock breeding purpose. For planting rubber, an individually or a company is entitled to have lease rights up to 5,000 acres of land for a duration of 30 years, which can be further extended if necessary.

In recent years, local prices of rubber have reached unprecedented high levels. In 1994-95, local prices of rubber per pound ranged from Kyat 40-45 in the low range and Kyat 75-80 in the high range, with the average at about Kyat 60-65, and the prices remained more or less constant till 1999-2000 and 2000-01. These favourable rubber prices have greatly increased the interest of entrepreneurs and planters in growing rubber.

This favourable policy and economic environment, together with the impact of the Rubber Rehabilitation Projects and the Technical Assistance Projects implemented in the 1980s and early 1990s, have had a tremendous demonstration effect resulting in much interest in rubber cultivation from both old and new planters.

### **3.1.2. Planted Area and Production**

Since plantation crops constitute an important sector in agriculture and in the economy of the country, the government has accorded a high priority to this sector. In order to promote plantation crops, a new enterprise by the name of Myanmar Perennial Crops Enterprise (MPCE) was formed under the Ministry of Agriculture in June 1994. MPCE is responsible for the promotion and development of plantation crops in both the government and private sectors, the major crops being rubber, oil palm and cashew. An ambitious expansion plan starting from 1996-97 to 2000-01 has been laid aiming to expand the existing rubber area of 220,000 acres in 1994-95 to 500,000 acres in the year 2000-01. Though the set target has not been fully realized, an average of more than 35,000 acres per annum, that is many times more than the achievement during

the past years, has been planted at various states and divisions where Taninthayi Division and Mon State became the vital and largest rubber areas. The achievement during this period is shown in Table 1.

**Table 1 : Annual Expansion of Rubber**

(acre)

Year	Area at the start of year	Expansion within year	Area at the end of year
1991-92	190,753	2,639	188,144
1994-95	204,429	15,477	220,406
1995-96	220,406	38,492	258,898
1996-97	270,506	23,541	294,044
1997-98	294,047	39,402	333,449
1998-99	333,449	38,954	369,403
1999-00	369,403	49,592	418,995
2000-01	418,995	27,206	446,201
2001-02	446,201	13,753	459,954

Source: MPCE

**Table 2 : Area Expansion of Rubber by State & Division**

Sown acreage ( '000 acre)

State & Division	1970 - 71	1980 - 81	1990 - 91	1995 - 96	1996 - 97	1997 - 98	1998 - 99	1999 - 2000	2000 - 01	2001 - 02
Kachin	*	*	*	1	2	3	4	5	6	6
Kayah	-	-	-	-	*	*	*	*	*	*
Kayin	11	9	10	13	19	25	28	28	33	35
Sagaing	-	-	*	*	*	*	*	*	*	*
Taninthayi	104	98	87	88	92	97	101	102	103	103
Bago	11	11	11	31	33	39	42	45	49	48
Mon	77	73	76	111	121	132	147	179	194	202
Rakhine	1	1	2	2	5	6	8	10	10	10
Yangon	13	8	4	12	18	20	22	29	28	29
Shan	-	-	*	1	3	10	16	20	23	25
Ayeyarwaddy	*	*	*	*	1	1	1	1	2	2
<b>Total</b>	<b>217</b>	<b>200</b>	<b>191</b>	<b>259</b>	<b>294</b>	<b>333</b>	<b>369</b>	<b>418</b>	<b>446</b>	<b>460</b>

Source: MPCE

\* Area of less than 500 acres

Traditionally, growing of rubber was confined only in Mon State and Tanintharyi Division but later on due to the efforts exerted by MPCE, special zones for growing rubber were designated and expansion was carried out not only in Mon State and Tanintharyi Division but in other suitable localities such as Kachin, Kayin, Kayah, Shan and Rakhine States, and Bago and Yangon Divisions as well (Table 2).

Parallel to the increase of area there also was the spring up of production in this industry. Sown area, productive area and production of rubber in Myanmar is arrayed in Table 3.

**Table 3 : Sown Area, Productive Area and Production of Rubber**

Year	Sown area (acres)	Productive area (acres)	Production (mt)
1960-61	139,919	95,393	13,209
1970-71	217,282	116,394	13,417
1980-81	200,234	115,196	18,836
1990-91	190,753	97,351	14,535
1995-96	258,898	120,127	25,660
1996-97	294,047	113,301	25,966
1997-98	333,449	118,162	27,058
1998-99	369,403	117,024	22,943
1999-00	418,995	129,558	26,597
2000-01	446,201	153,159	35,662
2001-02	459,954	152,413	36,077

Source: MPCE

### 3.1.3. Marketing System

During the period of centralized economy, the government agency is the sole buyer and exporter of rubber. The grower had to sell his rubber on quota basis with the fixed price to the government agency which provided the local consumption and the surplus exported. Rubber purchased is shown in Table 4.

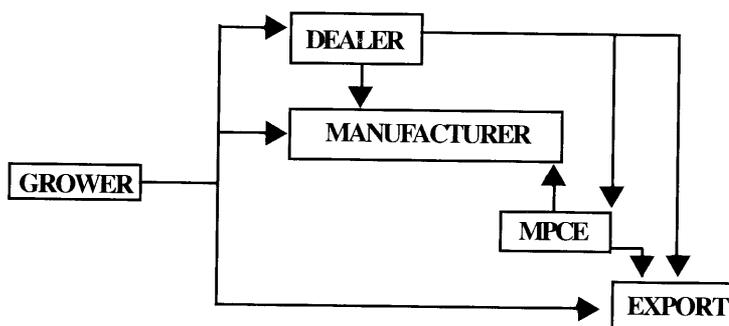
**Table 4 : Rubber Purchased**

Year	Volume (MT)	Agency
1970-71	10,994	MAPT
1980-81	13,317	MAS
1995-96	896	MPCE
1996-97	2,310	"
1997-98	2,250	"
1998-99	14,990	"
1999-00	18,987	"
2000-01	17,900	"
2001-02	13,034	"

Source: MPCE

The existing procedure is the grower can sell to the government agency or private dealers or manufacturer. The dealer buys from growers and sells to government agency or manufacturer. For export purpose, the dealer has to sell to government agency 45% first, and the balance 55% shall be exported with the recommendation by government agency. The marketing channel is shown per diagram below:

**Chart 1 : Marketing Channel**



Source: MPCE

### 3.1.4. Export and Import of Rubber and Rubber Products

Due to the development of industrialization, rubber demand is increasing also. There are two types of rubber: natural and synthetic. The sharp in-

crease of natural rubber production and consumption is observed as the following.

**Table 5 : Natural Rubber Production and Consumption**

(million mt)

	1960	1987
Production	2.03	6.37
Consumption	2.11	6.58

Source: MPCE

According to estimate of International Rubber Study Group, the demand of natural rubber would be around 7.76 million ton in year 2020. Rubber is an important export commodity. Rubber can be exported by authorized agency or licensed dealer. FOB Yangon Price is based on the Price at Singapore and Malaysia. As the production ascended, domestic distribution and export volume also arose and details is stated in Table 6 and rubber importing countries from Myanmar is shown in the Table 7.

**Table 6 : Yearly Production and Distribution**

Year	Production (MT)	Distribution		Total (MT)
		Domestic (MT)	Export (MT)	
1960-61	13,209	-	10,398	10,398
1970-71	13,417	1,777	9,304	11,081
1980-81	15,836	1,442	10,011	11,453
1990-91	14,535	1,505	1,000	2,505
1995-96	25,660	1,786	24,800	26,586
1996-97	25,966	2,345	25,400	27,745
1997-98	27,058	1,297	21,800	23,079
1998-99	22,943	497	29,700	30,197
1999-00	26,597	130	24,400	24,530
2000-01	25,667	658*	20,100	20,758*
2001-02	36,077	1,087*	21,631*	22,718*

Source: MPCE

(\*MPCE Only)

**Table 7 : Rubber Importing Countries**

(mt)

Country	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00
Asia	23,900	24,755	25,111	21,858	28,360	29,316
China	330	-	150	-	122	325
India	-	291	38	605	3,970	2,021
Singapore	19,944	15,549	19,011	17,641	17,257	11,228
Malaysia	2,822	2,849	5,297	2,472	5,230	15,017
Hongkong	517	365	101	277	-	-
Japan	-	-	196	13	108	-
Thailand	-	-	-	18	-	-
Korea	287	291	124	234	1,594	725
Pakistan	-	369	194	526	-	-
Iran	-	41	-	-	-	-
Taiwan	-	-	-	-	61	-
Other	-	-	706	146	1,806	373
<b>Total</b>	<b>23,900</b>	<b>24,755</b>	<b>25,817</b>	<b>22,004</b>	<b>30,166</b>	<b>29,689</b>

Source: MPCE

The table shows that most of the rubber is exported to Asian countries accounting over 98% of the six year average of total export. It is interesting to note that natural rubber import of ASEAN + 3 countries in 1997 are as the following:

**Table 8 : Natural Rubber Import of ASEAN+3**

Country	Annual Import (thousand mt)
China	430
Korea	301
Japan	730
<b>Total</b>	<b>1,461</b>

Source: MPCE

As mentioned above natural rubber is produced and exported in the form of raw material. Rubber products are daily essential and are great importance to the local consumers. Rubber products are also imported with the annual average of Kyats 176.1 million for six years.

**Table 9 : Import of Rubber Products**

<b>Year</b>	<b>Annual Import (million Kyat)</b>
1995-96	87.6
1996-97	136.6
1997-98	156.6
1998-99	227.9
1999-00	205.0
2000-01	242.8
<b>Average</b>	<b>176.1</b>

Source: MPCE

### **3.1.5 Rubber Product Industry**

To meet the local demand, there are two sectors in the rubber products manufacturing namely state owned and private. Under the state owned industry there are six factories under three different ministries.

**Table 10 : List of Rubber Products Factory**

<b>Factory</b>	<b>Location</b>	<b>Ministry</b>
Rubber glove	Mingalardon	Agriculture & Irrigation
Fan belt	"	"
Rubber goods	Mayangon	"
Foot wear	Insein	Industry (1)
Rubber goods	Thingangyun	"
Tyre & Rubber	Thahton	Industry (2)

Source: MPCE

In an attempt to promote rubber related industries, some small scale private manufacturers have been set up. There are altogether 379 private enterprises in Rubber Product Industry, registered up to the year 1999 (Table 11).

These enterprises spread over two States and four Divisions. They are Yangon, Mandalay, Tanintharyi, Bago Divisions and Mon and Shan States. The main locations of these enterprises are Yangon and Mon State only. Being the small-scale enterprise, the average number of employee per factory stands only 5.5 head.

**Table 11 : List of Rubber Products Enterprise**

<b>Enterprise</b>	<b>Number</b>
All rubber	211
Rubber sheet	56
Rubber sole	57
Rubber tube	3
Rubber glove	1
Rubber apparel	6
Tube for car / bicycle	3
Toy	34
Tyre	4
Sponge bed	2
Battery box & parts	2
<b>Total</b>	<b>379</b>

Source: Ministry of Industry (1)

## **4. DEVELOPMENT STRATEGIES**

### **4.1. Rubber Production**

Annual rubber consumption is increasing around by 3.8%. There are area limitation in major rubber growers of Thailand and Malaysia. There is a potential area for rubber development in Myanmar. So a long term plan of rubber development is drawn up and 1.5 million acres will be established in 2030.

**Table 12 : Planned Area and Production of Rubber**

<b>Year</b>	<b>Area (thousand acres)</b>	<b>Production (thousand mt)</b>
2005-2006	540	61.9
2010-2011	650	98.3
2015-2016	800	127.8
2020-2021	1,000	168.7
2025-2026	1,250	226.8
2030-2031	1,500	294.8

Source: MPCE

For the development of the rubber under the envisaged ambitious plan,

even though the policy and economic environments are favourable there are still a number of priority needs which need immediate attention.

## **4.2. Role of the Private Sector in Rubber Industry**

In the rubber sector, in terms of ownership, the state owns only 8% while the majority, 92% of the total is possessed by the private sector. Thus it can be stated succinctly that there is a need to exert more efforts for the development of private sector where 40% of the areas planted with low yielding varieties. Therefore, every endeavour will have to be made for the involvement of the private sector in replacing the unproductive rubber with high yielding rubber clones. Thus MPCE will have to continue its exerting all out efforts in rendering persistent extension services to the private planters so that 90% of the total rubber planted area will be substituted with modern high yielding varieties, distributed by both the state and the privates, within ten-year period.

## **4.3. Extension Services**

In an endeavour to promote the planting of rubber and other plantation crops, the government formed the Myanmar Perennial Crops Enterprise (MPCE), a new organization under Ministry of Agriculture in June 1994, to undertake the promotion and development of plantation crops in both the government and private sector. Under the organization of MPCE, there is an Extension Division to provide extension services to private planters. To be able to provide efficient extension services MPCE has been successively conducting the trainings for the staff to improve their knowledge on rubber technology and extension services. The Enterprise has also been undertaking the demonstration plots, organizing field days, conducting the trainings for the private planters. As all these activities have tremendous impact on the planters and also with the envisaged accelerated rubber expansion program, the activities will have to be continued and stepped up so that the rubber holders become fully aware of appropriate technologies to be followed for the success of their plantings.

#### **4.4. Research Needs**

It is opportune that the ARCPC project had been implemented from 1991 to 1994 with the establishment of a research centre with appropriate facilities to undertake applied research on traditional plantation crops and new potential crop, and to provide training and related plantation crop technologies to assist farmers. In the course of implementation the project had undertaken a numbers of research activities on various disciplines related to plantation crops. However, there are still many areas which require further research and improvement. Some of the areas which need further research are appropriate fertilizer requirement of different stages of rubber plants at different regions, selection of agro-climatically suited-quality varieties, establishing the seed gardens, the most efficient and economical method of controlling weeds in rubber estates, the choice of appropriate intercrops with the growth and leaf canopy pattern of rubber plants.

#### **4.5. Planting Materials**

With the planting program of rubber replanting and new planting of around 20,000 acres annually there is a need of about 5 to 6 million planting materials annually and this requirement will have to be fulfilled by both the state and private sector. The government issued a notification in August, 1992 in connection with the registration of rubber nurseries established by the privates. The objective is to organize the nurseries systematically so that correct nursery technology is followed to produce high quality planting materials of the desirable types and only those recommended clones produced and distributed to rubber growers. The nurseries are inspected regularly by the trained qualified clone inspectors from MPCE to ensure the purity and quality of planting materials to be produced, and this task will have to be continued regularly so as to avoid the production of undesirable planting materials from the nurseries since the planting of such materials could in the long run have the adverse impact on the whole rubber industry.

#### 4.6. Chemical Fertilizers

Chemical fertilizers play an important role for the development of the rubber plants. It is necessary that the appropriate fertilizer with the required nutrient content and ratio, should be applied in the appropriate quantity in accordance with the age and growth of the rubber plants. The cost of fertilizer is substantial and constitutes a major component of the cost of rubber establishment and maintenance, representing some 70% of the total cost. Fertilizer requirement at each end year of respective decades of long term plan is illustrated in Table 13.

**Table 13 : Fertilizer Requirement at Each End Year of 1<sup>st</sup>, 2<sup>nd</sup> and Last Decades**

Period	Area ('000 acres)	Fertilizer requirements		
		Urea ('000 mt)	Tripple super Phosphate ('000 mt)	Muriate of potash ('000 mt)
1 <sup>st</sup> decade end (year 2010)	650	24.50	32.50	6.50
2 <sup>nd</sup> decade end (year 2020)	1,000	37.50	50.00	10.00
3 <sup>rd</sup> decade end (year 2030)	1,500	56.25	75.00	15.00

Source: MPCE

As per the above table, a reasonably large quantity of fertilizer is required and this requirement will have to be made available from local industries and through imports.

#### 4.7. Role of Intercropping

Intercropping provides not only food, vegetables and cash but also reduces the cost of weeding and enriches the soil with organic matter with subsequent improvement of the soil. Intercropping in perennial crops is not uncommon in Myanmar. It is traditionally, a common practice for small holders to grow intercrops in rubber plantations usually from the planting year until 3 to 4 years. Many large or medium holders do also realize the beneficial effects of intercropping however due to many reasons they rarely undertake intercropping in their holdings by themselves.

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As area expansion of rubber is being carried out by all the large, medium and small holders and also due to the beneficial effect of intercropping which forms an important component of tree-crop-based-farming system to improve the income and living standards of farmers, extensive extension services will have to be provided so that there will be the prompt dissemination of this practice among rubber planters of different strata.

#### **4.8. Investment Needs**

Cost of establishment of an acre of rubber from planting till maturity is around Kyat 137,000; out of this first-year-planting costs alone is over Kyat 33,000. Thus, it can be said that establishing a rubber plantation is not only a long-term-invested task but also a heavily invested one. In observing the structural situation of Myanmar rubber industry it is discovered that the majority of rubber holding are small holdings. According to 1992-93 data, small holdings with less than 20 acres represent 17,187 in number (92%) and 71,573 acres in area (37%) Medium-sized holdings, of between 20-100 acres, constitute 1,323 in number (7%) and 44,496 acres in area (23%). Large holdings, of more than 100 acres are few, numbering 132(1%) and 76,435 acres in area (40%). Mostly large or medium holders are well-to-do and thus they may be able to afford the long-term investment for the establishment of rubber. However, smallholders are resource poor and lack investment. On the other hand, for the successful accomplishment of the envisaged accelerated rubber expansion plan, collaborated efforts by the large, medium and small holders will no doubt be needed. Therefore, the expansion plan could not only be successful but also highly accelerated if appropriate measures, such as of rendering financial assistance to the planters, in the form of providing low interest loan or establishing Rubber Planting Aid fund or implementing Small Farmers Rubber Plantation Scheme being successfully exercised by the governments of neighbouring Malaysia and Thailand,would have to be taken into considerations by the State.

#### **4.9. Rubber Goods**

Local private enterprises are producing rubber goods. Some major goods are also imported. New industrial zones are developed and some rubber

goods will be produced. Establishment of rubber manufacturing plants are dependent on the availability of capital and operation costs. Development Centre for Rubber Technology (DCRT) of Myanma Perennial Crops Enterprise under the Ministry of Agriculture & Irrigation was established in 1987 with the following main objectives:

- To check the specification of chemicals for rubber product
- To produce new rubber goods
- To conduct training for production of rubber goods
- To promote the quality of goods

DCRT is producing with its strength and machine capacity some ordered goods by private and government agencies. Items and quantities of ordered goods are increasing year by year. In the year 2001-02. Some rubber block, rubber buffer, rubber roller, rubber seals, break lining, impeller, bush, stopper, o'ring, household glove, meteorological ballons etc. were produced for the agencies and privates. DCRT is also conducting Basic Rubber Technology Training Courses for staff and private. Some research works on rubber products such us rubber water stop, rice polishing roller brake washer, golf practice grass, reclaimed rubber, Suzuki car/cycle spare parts etc, are underwent. DCRT is trying to contribute utmost in the field of rubber technology.

## **5. CONSTRAINTS AND ISSUES**

### **5.1. Land Policies**

Rubber being a perennial crops land policy should be clear and give guarantee the growers. After introducing of market oriented economy, up to 5000 acres allowed to rubber growers. Some rubber newly planted area and old rubber tree area were occupied by authority, which hinder the interest of rubber growers. Growers are responsible for the security of their area, but some case of chopping, setting fire, grazing are faced.

### **5.2. Production**

Rubber production is around 36000 ton per year and mostly in the form of smoked sheet. Only one block rubber factory with the capacity of

1,500 ton per year is under MPCE. Most of the smoke sheets are also low grade of No.4 and 5 because over 90% of production is by private small-holders. Need to upgrade the quality of smoked sheet rubber. Establishment of block rubber factories are needed accordingly. To improve the production and quality of product, some machinery and equipment should be installed and replaced.

Over 90% of the country's total production is produced by private sector where the lower rubber grade of RSS No.4 and 5 are mainly produced. The growers should improve the quality through proper uses of machinery and chemicals. Existing price differential can be illustrated as the following:

**Table 14 : Local Purchasing Price**

Grade		Price (Kyat/lb)
RSS	1	140
"	2	130
"	3	120
"	4	110
"	5	100

Source: MPCE

### 5.3. Marketing

Due to the introducing of market economy, rubber marketing is doing well. Rubber grower can sell to MPCE or local dealers or other agencies with prevailing prices. The purchasing price is based on SICOM Singapore price. Market information system is not yet developed.

### 5.4. Export

Rubber export can be made either MPCE or local exporters. Existing procedure is private or exporters can export 55% of rubber and the rest sold to MPCE with the prevailing purchasing price. 10% of export value is deducted by authority whether MPCE or other export. The exporters are faced with deduction which hinder the process of purchasing price. 10% deduction of the export value leads to the 11.3% less purchasing price

from growers. The dealer or exporter may buy rubber from grower with 264 Kyat per pound if there is no deduction. But if there is deduction the dealer or exporter can buy only at the price of 234 Kyat per pound. There is a difference of 30 Kyat per pound lost by the growers. Calculation based on FOB price per metric ton of RSS No.5 is made.

**Table 15 : With and Without 10% Deduction**

	<b>With</b>	<b>Without</b>
FOB US\$	630	700
Equivalent Kyat	567,000	630,000
Transport	(-) 10000	(-) 10000
Profit	(-) 30150	(-) 30150
Price at Yangon	526,850	588,500
Transport	10,000	10,000
Price at site	516,850	578,500
Price per Pound at site (Kyat)	534	246
Difference (Kyat)	(-) 30	-

Source: MPCE

## 5.5. Finance and Tax

Growers are interesting to replant and new planting but the cost of establishment is high, about 150,000 Kyat per acre, up to maturity. Credit loan with low interest is major catalyst to develop rubber industry. Otherwise tree grows old and no replanting or new planting would hinder the sustainability of industry. Yearly expenditure is estimated as the following:

**Table 16 : Investment Cost**

(Kyat/acre)

<b>Planing year</b>	<b>Labour</b>	<b>Material</b>	<b>Total</b>
Year 1	21,000	19,000	40,000
2	8,000	9,000	17,000
3	7,000	10,000	17,000
4	6,000	13,000	19,000
5	6,000	13,000	19,000
6	6,000	13,000	19,000
7	6,000	13,000	19,000
<b>Total</b>	<b>60,000</b>	<b>90,000</b>	<b>150,000</b>

Source: MPCE

As per below investment cost and profit when production occurs, it is found that the recovery period is around 13½ year of the planting. When the planted area matures, the production starts and expenditure and income level per acre is the following :

**Table 17 : Expenditure and Income**

(a) Production	500 lb
(b) Expenditure	40,000 kyats
(c) Income	60,000 kyats
(d) Profit (c-d)	20,000 kyats

Source: MPCE

Land revenue is paid by the growers according to their entitled area. For estate of large plantation, the owner has to pay

- (a) land revenue,
- (b) commercial tax and
- (c) income tax.

This issue also hinders the interest of establishing estate or large plantation.

## **5.6. Rubber Products**

Most of the rubber is exported. Production of rubber goods, the value added and import substitute increase GDP of industry. It is highly needed to encourage local enterprise to invest and produce rubber goods. Import of machinery, equipment and chemicals are allowed. Loan and foreign investment are major catalyst.

## **6. MEASURES AND WAYS FOR FURTHER DEVELOPMENT**

### **6.1. Agronomy**

Most of the area under rubber is old aged, which needs to replant. According to national plan of area extension, the area is also to be planted with high yielding varieties. There is a need to produce high yielding planting material. The growers are also organized to train the new technique of planting, field upkeep, processing. Training courses are to be conducted at different zones.

## 6.2. Industry

Small Scale rubber industry was developed. Some courses on rubber technology is conducted at the Development Center for Rubber Technology and private manufactures are invited. To promote this sector, financial assistance or loan is highly needed.

## 7. PROSPECTS AND CHALLENGES

### 7.1. Yield

Over 92% of the total planted area is owned by private sector. Where most of the area is planted with low yielding varieties, producing total average yield of 522 lb/ac/year. Replanting of those over aged tree and planting of new area with high yielding varieties. Yield increases and production cost will be reduced accordingly. Long term plan of yield per acre per annum is estimated as the following:

**Table 18 : Long Term Plan of Yield**

Year	Pound/yr	Increased
2005	525	0.60%
2010	550	4.80%
2015	575	4.50%

Source: MPCE

### 7.2. Competitiveness

Due to the land availability, and relatively low labor cost, initial investment cost and production cost will be low. Some block and latex concentrate factories are also to be established, producing international recognized raw goods. Thus, Myanmar rubber becomes more competitive in the international market and also it will be low raw cost for local manufactures. Potential area is shown in Table 19.

### 7.3. Value Added Products

Due to the increase of rubber production and manufactures, production of value added rubber goods is envisaged. Old rubber tree are due to

**Table 19 : Land Potential Area**

('000 acre)

State / Division	Land available	
	Total	Suitable for rubber, oil palm & cashew
Kachin	5,296	2,000
Kayah	157	-
Kayin	511	200
Chin	3,889	-
Sagaing	1,424	200
Taninthayi	960	800
Bago	729	500
Magwe	666	-
Mandalay	818	-
Mon	323	150
Yangon	170	15
Rakhine	553	300
Shan	7,062	2,000
Ayeyarwaddy	845	300
<b>Total</b>	<b>23,403</b>	<b>6,465</b>

Source: MPCE

replant and rubber wood and rubber wood furniture making industry is also setting up. Production of rubber goods is the import substitute and production of rubber furniture is the environmentally friendly process.

**Table 20 : Rubber Wood Factory**

Location	Capacity (Hopper ton/yr)
<b>Bago</b>	
1. Bago	1,000
2. Daik U	1,000
<b>Mon</b>	
3. Mawlamyine	1,500
4. "	1,000
5. "	500
6. Ye	1,000
<b>Taninthayi</b>	
7. Dawei	1,000
8. Myeik	500
<b>Total</b>	<b>7,500</b>

Source: Ministry of Industry (1)

Those factors would promote the sustainability of rubber industry. There are altogether 8 rubber wood processing factories with the capacity of 7500 Hopper ton/yr.

#### **7.4. Research and Development**

A research centre already established is undertaking applied research, providing training course and producing planting materials. Establishing demonstration plots, organizing field day, conducting training for private growers will accelerate the development of their awareness of appropriate technology which will promote the industry.

#### **7.5. Human Resources Development**

Regarding rubber, main functions of MPCE are planting, producing and processing of rubber, provision of extensive services, planting materials and other inputs, research, training and marketing. There are three research stations which are undertaking for the agronomic and rubber products manufacturing.

- (i) Applied Research Centre for Perennial Crops (ARCPC)
- (ii) Applied Research Centre for Oil Palm (ARCOP)
- (iii) Development Centre for Rubber Technology (DCRT)

Out of the total appointed staff 1858, there are 454 graduates, and 386 Diploma, representing over 45%. For the HRD programme, Pre Service Training, Refresher Courses on different trades, Estate Manager Courses, English Courses, Computer Courses and Rubber Goods Manufacturing Courses are conducted. Staff who is entitled to study the B.AgrSc, M.AgrSc degree courses is allowed to attend.

### **8. FINDING**

- (a) Development of rubber industry, sharply increased in the plantation sector but the manufacturing sector was developing at the slow rate.
- (b) Raw rubber consumption would increase when manufacturing sector developed.
- (c) Due to the increased demand of natural rubber at the international market, there is a further need of area extension.

- (d) Private participation is over 90% in rubber production, investment should be solved through long term soft loan for the interest of private growers.
- (e) Market information system was not developed yet and the growers are not receiving the proper fair price.

## **9. RECOMMENDATION**

For the further development and sustainability of rubber industry the following recommendation should be undertaken.

- (a) A long term plan of rubber area development has been set proper implementation plan drawn up.
- (b) Replanting and new planting rubber with high yielding cultivars. Provision of planting material and estate utensils.
- (c) For the interest of growers, land security should be made where necessary.
- (d) To boost up production and upgrade the quality, machinery and equipment established.
- (e) Soft loan for growers and manufacturers should be developed.
- (f) Market information system should be established.
- (g) For export orientation, tax system should be reviewed.
- (h) Some critical issues for foreign investment should be reviewed.
- (i) Being a long term crop, intercropping system should be developed within the immaturity period.

## **10. CONCLUSION**

Rubber industry plays an important role in the agriculture sector and in the economy of the country. 30-Years Long Term Development Plan has been set up to extend the planting area to 1.5 million areas. The development is much dependent on those factors of major issues which are hindering the active participation of local and foreign entrepreneurs. Solving above mentioned major issues would ensure the sustainability of rubber industry, which will help the economic growth of the country as well.