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in China and Cooperation with ASEAN Countries**

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Rubber Industry with Reference to China-ASEAN Regional Integration**

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Farms in China and Cooperation with ASEAN Countries

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Abstract: China has the most natural rubber consumption in the world, and its self-sufficiency is less than 1/3 at present. Hainan, Yunnan and Guangdong State Farms are three major natural rubber production bases in China which provided nearly 58.37% of natural rubber output in 2007. Since 2002, the three state farms have planned and implemented the "Going Global" strategy positively, and already developed substantive cooperation with ASEAN countries, trying hard to expand the rubber planting and processing to Southeast Asia countries. Under the background of speeding up the integration of China-ASEAN region, it would be helpful to summarize the concrete practice of natural rubber "Going Global" strategy of upper three state farms, analyze its advancement and contrast the difference, and study some issues on the positive factors, constraints factors, and mode selection of cooperation. It is expected that not only it would be beneficial to the success of natural rubber's "Going Global" strategy, but also beneficial to strengthen cooperation with ASEAN countries.

Key words: China State Farms; Natural Rubber; "Going Global" Strategy; ASEAN

1 Introduction

In 2001, China rubber consumption surpassed US and it became the biggest country of consuming and importing rubber in the world. At present, its self-sufficiency rate of natural rubber is less than 1/3. Under the background of the domestic strong demand for natural rubber, increasing import and the relative lack of domestic resources, some experts appealed protecting the safety of natural rubber industry and speeding up the establishment of overseas natural rubber production bases. Hainan, Yunnan and Guangdong State Farms have been developed as China's three major natural rubber superiority plant regions and production bases which have supplied the majority of natural rubber since their foundation, approximately accounting for 58.37% of the national production in 2007¹. Under the national

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¹ According to the data of three state farms, by the end of 2007, the total natural rubber production of Hainan, Yunnan and Guangdong state farms was 171,000, 168,400 and 22,500 tons each, reaching 361,900 tons, accounting for 58.37% of the total output of 620,000 tons.

initiative and the profession impetus, the three state farms planned and implemented "Going Global" strategy actively from 2002.

"Going Global" strategy reflects the will of Chinese government, which scholars gave different connotations, such as international trade and foreign investment, or the output of products, the technology and capital, but more incline to believe that the key problem of "Going Global" is foreign direct investment(FDI). The related theory of FDI, whether Transaction Cost of Rugman A.M, Monopoly Superiority of Hymer, the Product Life Cycle Model of Vernon, or the Expansion of Trade and Business Conduct Space Model of Watts that study the trade expansion and business conduct spatial change, or the International Production Compromised Model of Dunning J.H and the Marginal Industry Theory of Kiyoshi Kojima, basically research the developed country, analyze the motivation and conditions of foreign investment of multinational corporations. These theories, mainly focus on the enterprise (multinational corporations) themselves to provide a reasonable and sufficient theory support for "Going Global" from the microscopic angle, or analyze the realization of the strategy from the macroscopic angle. The trade expansion urges the enterprise to change spatial behavior is a reasonable explanation [1]. Hainan, Yunnan and Guangdong State Farms have set up the rubber industry groups. They are the leading force of natural rubber planting in China. Do they meet the theory?

The production and export market of world natural rubber is in ASEAN, where more than 90% natural rubber imports of China imported. Hainan, Yunnan and Guangdong State Farms pay close attention to the Southeast Asia market, and develop the substantive cooperation with ASEAN countries in order to expand the natural rubber planting and processing to those countries. Obviously, "Going Global" means to set up the oversea natural rubber base through developing natural rubber planting, processing industry and trade rather than export the rubber. In ASEAN, the three old members Thailand, Indonesia and Malaysia are main natural rubber countries whose rubber industry is competitive. Their output accounts for about 65% of the world in 2007. The new ASEAN member countries, such as Vietnam, Myanmar and Laos, are speeding up rubber industry development. China's natural rubber industry has its own advantages. With the acceleration of the process of China -ASEAN regional integration, all traders and professions in China are seeking cooperation with ASEAN to acquire benefits. The author believes that the "Going Global" strategy of three state farms has specific mission. Good expectation depends on the farms effort, government support, and cooperation with ASEAN countries. The last has uncertainty. So, this paper attempts to analyze the concrete practice of the natural rubber "Going Global" strategy of three state farms, study some issues on the positive factors, mode selection, constraint factors of the ASEAN's cooperation. It is anticipated to have a clear understanding and helpful thinking.

2 Implementation of natural rubber "Going Global" strategy

2.1 Background and process

In 1998, the Central Committee of CPC recommended studying and implementing "Going Global" strategy in order to explore the international market and utilize foreign resources; 4 years later, the 16th CPC National Congress pointed out that the implementation of the "Going Global" strategy is a momentous decision in the new stage of opening-up. China encourages and supports various forms of ownership enterprises that have comparative advantages to invest abroad. In order to carry out the Party's decision, all districts and departments began to implement "Going Global" strategy. In the same year, the Ministry of Agriculture formed a plan of "Going Global" for China State Farms. Hainan, Yunnan, Guangdong, three major natural rubber state farms went about work positively. The process can be divided into two phases.

First phase, from 2002 to 2005, is the period of 10th "Five-Year Plan" in China, the time when overseas natural rubber bases turned into the action from the argumentation. Three state farms started to plan "Going Global" strategy and launched the forum to research. For example, on March 5, 2004, Yunnan State Farms held a rap session to discuss the strategy. From May 30 to June 1, 2005, the Ministry of Agriculture and Department of Foreign Economic Cooperation of Ministry of Commerce jointly organized a seminar to discuss such strategy of China State Farms, Hainan, Yunnan, Guangdong State Farms introduced their experience; turning ideas into action, the state farms organized cadres to survey abroad and experts to demonstrate, seeking for cooperation. They achieved substantive results which can be seen as arriving at an agreement of cooperation intention, renting land for plantation, purchase processing plants; "Going Global" strategy were written into the 11th "Five-Year Plan" of each state farms. Like Hainan, the strategy became one of three major strategies, it planned to plant overseas natural rubber 200,000 mu (Chinese acre), purchase and process 200,000 tons of rubber till 2010. Yunnan State Farms planned to plant overseas natural rubber 2,000,000 mu and produces 200,000 tons[2], while Guangdong State Farms planned to develop overseas natural rubber base about 500,000 mu and strive for 500,000 tons output in the end of 11th "Five-Year Plan"[3]. There was an important landmark this period, the foundation of the natural rubber industry group, which was a suitable carrier to carry out "Going Global" strategy. Among these, Yunnan State Farms set up Yunnan Natural Rubber Industrial Co., Ltd. in July 2004, Hainan State Farms set up Hainan Natural Rubber Industry Group Co., Ltd. in March 2005, and Guangdong State Farms set up Guangdong Province Guangdong State Farms Rubber Group Co., Ltd. in June 2005 after received administrative reply from Farm Bureau.

The second phase, from 2006 till now, the state farms carry out strategy constructively according to 11th "Five-Year Plan". Hainan State Farms, 2006 was determined as the first important year for "Going Global". In the same year, August 24-25, the National State Farms "Going Global" strategy seminar was held, Guangdong, Hainan State Farms reported their implementation and experiences. In

November 14-15, 2007, the China Natural Rubber Association was founded, which was a symbol of Market-oriented and internationalization of China natural rubber industry. During this period, due to China's natural rubber consumption expanding and import increasing, the appeal to protect domestic natural rubber industry safety and establish overseas natural rubber production base was intensive. Each state farms carries on businesses which are rubber processing, land renting and purchasing for natural rubber plantation, rubber trade in Southeast Asia countries. Yunnan and Guangdong have much more substantive performance. On September 13, 2008, Guangdong State Farms and Malaysia Sabah signed the contract of 180,000 mu natural rubber plantation cooperation project; the total investment is 80,000,000 U.S. dollars and 50% each. It will start planting at the end of the year, and they will also build rubber processing plants before putting into production [4]. Besides, Sinochem International (Holdings) Co., Ltd., several farms and private enterprises in Yunnan Xishuangbanna and other places, as well as some tire companies in Shandong are also investing natural rubber plantation or rubber processing abroad.

2.2 The reason of natural rubber "Going Global" strategy of three state farms

From the view collected, the main consideration of natural rubber "Going Global" is that, to increase natural rubber cultivation area and output in China is difficult and only to depend on the traditional trade channel is unstable. Participating in foreign natural rubber resources development and industrial construction, to build long-term and stable supply of natural rubber and obtain nature rubber resources directly through foreign investment to meet the domestic economy development, it's a mean of solving contradiction of supply and demand; To meet the needs of growth and development space of rubber group in the future, in particular in the domestic resource constraints and the background of economic globalization; To upgrade natural rubber core competitiveness in China; to promote cooperation and exchange between China and foreign countries[5]. The "Going Global" strategy of three state farms is not only to satisfy their own development, but also to carry specific duty and mission: to ensure the natural rubber from abroad accords with China's needs. So, the reason of "Going Global" strategy includes national and enterprise angles. From natural rubber as a cash crop and businesses to obtain economic benefits as the objective, it is independent acts of enterprises. From natural rubber as China's strategic resources and important imported energy, it contains the meaning of the state will. However, natural rubber as energy, under meeting the national interest, "Going Global" should be the autonomy of enterprise behavior, to operate in accordance with rule with the national support. "Going Global" strategy is essentially corporate behavior.

2.3 The comparison of natural rubber "Going Global" strategy practice of three state farms

The practice of the natural rubber "Going Global" strategy of three state farms has a lot in common together with differences. Similarities are as follows: as state-owned enterprises which undertake the mission to develop natural rubber industry and secure natural rubber supply, the strategy which was promoted by the government and industry reflected the will of state; the "Going Global" strategy

became the state farms (group) development strategy; the target investment countries were basically the same, Southeast Asian countries and some African countries which are suitable for natural rubber cultivation; investment businesses were similar which mainly were rubber processing, natural rubber plantation through land renting and the other. The main differences are:

Differences of work. The "Going Global" strategy was largely impelled by the government and formed at the end of 2002. The state farms invested overseas consciously former and had foreign agriculture aid experience. Under the new situation, Guangdong State Farms is the pioneer in large-scale overseas investment. In 2002, using the business and service platform of Guangdong, it cooperated with partners to set up an international rubber trade company which engaged in overseas imports of rubber products; in 2003, it started preparation for overseas rubber development; in 2004, it started to engage in rubber development in Southeast Asia in large-scale, established the industry, acquiring 5 rubber processing plants in Thailand and Vietnam, buying a latex products factory in Malaysia, operating 100,000 mu natural rubber plantation in the state of Sarawak, Malaysia. Yunnan State Farms has also made outstanding achievements in the cooperation of natural rubber development by using their border advantages. Especially, by using alternation of poppy cultivation and foreign aid projects, it can gain the support of policy, capital, technology and equipment from drug-suppression institution of UN and related organizations in China. When helping and driving the border planting in support of the local rubber industry, it achieves "Going Global" goal at the same time. In addition, the farms (branch) of Yunnan State Farms and employees are involved in overseas natural rubber cultivation, some workers of the farm (branch) shares stocks to participate in natural rubber cultivations in Myanmar and Laos. This is the biggest difference between Yunnan State Farms and the other two on the strategy. The schedule of Hainan State Farms is a bit slower. However, in early 2004, it contacted with some companies in Malaysia and reached an agreement of lease for rubber cultivation, and, according to "China Economic Weekly", till the end of 2005, it has invested 1,000,000 mu in Cambodia, 900,000 mu in Malaysia for rubber cultivation, and has set up factories in Thailand, Indonesia, Vietnam and other countries for rubber processing [6].

Differences of countries and regions invested. ASEAN countries are the first choice. Hainan State Farms chose Malaysia and Cambodia as main objectives; others were Thailand, Myanmar, and Vietnam. Guangdong State Farms chose Malaysia, Thailand and Vietnam under the principle of "First major rubber production country, then the secondary rubber production country". The selected areas not only have rich resources in rubber cultivation, but also are the relative concentrations of overseas Chinese. Yunnan's largest potential advantage is the border and the best condition is the Greater Mekong Sub-region cooperation, moreover, the economic development level of neighboring country is low. Therefore, it cooperated with neighboring countries in priority; focus on in Vietnam, Laos, Myanmar, Cambodia, Thailand, especially the northern part of Laos, North-East Province (state) in Myanmar. It also tried to cooperate with Malaysia and other countries.

Differences of the business. Mainly three types: cultivation, processing and trade,

the main difference in the focus or priorities. The main businesses of Hainan State Farms are natural rubber cultivation, acquisition and processing. It includes renting a large-scale land for rubber planting, establishing initial rubber processing factory and overseas rubber trading company in Malaysia and Cambodia, seeking for a new cooperation with Indonesia and other countries as well as Africa to establish overseas rubber production base. To carry out rubber trade business, extend e-commerce to Thailand and Vietnam, and strive to build "world rubber sales center" and the electronic trading market. Yunnan State Farms develops overseas rubber plantation and processing positively. It plants rubber through renting, purchasing and contracting barren hill, builds up rubber production factory, carries out sales and trade, builds the nursery base, demonstration rubber plantation and technical training centers to strengthen local demonstration and service. Its feature is to develop offshore natural rubber resources in cooperating with local villagers and government, and as the way of project to enrich farmers and develop regional economy. Guangdong State Farms is engaged in overseas imports of rubber products and market expanding through co-operating with partners; strengthen communication and wearing in cooperation, then in cooperation of rubber processing and rubber producing, finally in plantation. Now focus on the plantation and processing.

The natural rubber "Going Global" strategy of three state farms is the enterprise innovation behavior under the state's will. Besides their own endeavors, it involves a series of factors and the key is cooperation. The essay tries to summarize the practice of the strategy, but it can only make a general description as a result of the limited data. The purpose of comparing the similarities and differences is to provide reference for probing the cooperation with the ASEAN countries.

3 Issues on the cooperation with ASEAN countries

3.1 The positive factors of cooperation

(1) The regional economic integration and state's will of cooperation

The construction of China-ASEAN FTA and the Lancang-Mekong River sub-regional cooperation are accelerated. In the regional economic integration process, all of the governments have a good will to cooperate. Cooperation in different industries, fields and multi-layers are supported to promote the coherence of national strategic interests. The friendly cooperation agreement signed between China and ASEAN countries created a well environment. A series of substantive measures facilitates the cooperation between the two sides in a wider scope, greater fields and more space. Among the 5 key fields of cooperation between China and ASEAN, agriculture is highlighted as a key item. China and ASEAN countries can share benefits from the common development of natural rubber resources in ASEAN through cooperation in natural rubber plantation, processing and trade.

(2) The availability of resources

Southeast Asia countries locate in the tropical area, where the climate is suitable for natural rubber cultivation and land resources are rich, which offer favorable

natural conditions to plant natural rubber. Many abandoned, low-yield rubber plantations in Thailand, Indonesia and Malaysia need renovating and re-planting. Vietnam, Laos, Myanmar and other countries have so many wastelands which are suitable for planting natural rubber that the potential is great. As the top 4th big shortage industrial raw materials, the potential of natural rubber processing is great, either.

(3) Enterprise efforts

The increasing demand for rubber and rapid market development promote its favorable market potential and profit space. Enterprise is the main body to invest, so the "Going Global" strategy is independent spatial behavior itself. After 50 years of development, the three state farms have accumulated abundant experiences of production and management and possessed the ability of multinational operation, and it can provide plan, technology and capital supports for the offshore natural rubber industry development. Facing the changing situation, "Going Global" strategy was put forward so as to exploit new development chances. It's hoped that it would have international voice heard in the natural rubber field and make greater contributions to natural rubber development in the world by speeding up the internationalization process.

(4) The possibility of "the coupling of comparative advantage"

The idea of "the coupling of comparative advantage" argues that the premise of FDI of enterprises is that both sides have their own comparative advantages. Its motive is not to seek the return of a monopoly advantage, but to participate deeply in the international division of labour so that both sides can be complementary and reciprocal from comparative advantages. The condition is that both sides have their respective advantages, such as resource endowments. The point is to couple the comparative advantages into new integration advantages [7]. The three state farms have formed a relatively integrated industrial system judged from the scale, management, production and technology. The rubber cultivation, rubber wood use and tapping technology have reached the world level. Moreover, its resource allocating capacity is great and systematization level is high. Thailand, Indonesia and Malaysia, as the world's main producers of natural rubber, have advantages in rubber cultivation and production, and those emerging countries of developing rubber industry, like Vietnam, is rich in land resources which are suitable for natural rubber planting. ASEAN countries have a good relation with China, and the short transport distance and convenient transportation is favorable for being sent back to China after rubber processing. The integration of advantages maybe embodied in production increase, processing deepening and market expanding.

3.2 The main constraint factors of cooperation

(1) The support of cooperative countries

The main support from the cooperative countries embodies in the policy, ecology and local residents. From the angle of policy, Southeast Asia governments have a relatively positive attitude in attracting investment, and encourage cooperation seen from investment policy, industrial policy, fiscal and tax revenue policy, in particular the differences of policy would have an effect on the foundation of new plants and

their profits. There is external cooperation policy instability, lack of specific investment conditions, strict foreign exchange controls, such problems. From the angle of ecology, the co-ordination between land development and protection is mainly considered, which means, environmental protection and agricultural biodiversity must be considered. From the angle of local residents, the main consideration is economic development and poverty reduction for the better welfare, another point is the social environment of race and religion. It would be good to play geographical advantages of local shareholders to establish good community relations. The objective selection includes both powerful countries and emerging countries of rubber industry, and the latter have more development potential. The regions chose include where rubber resources are superior or many overseas Chinese gather. Yunnan State Farms chiefly choose north of Myanmar and Laos. The point is a new coupling advantage can be integrated.

(2) The risk of environment change

There are political, economic and natural risks which are risks of foreign investment. Political risk is loss of economic benefits caused by primarily political, social, military and unexpected events particular in a nation; the political stability and policy continuity are mainly taken into account. In some ASEAN countries, unstable political situation is a big political risk. The policy continuity, government bureaucracy and corruption, are all can cause the loss. The economic risk is mainly the market change, and possible serious economic risks brought about by the political risk. Mainly are the commercial pressure of competition, price risks under product sales globalization, risk of cross-border transactions and foreign exchange. The natural risk comes by variation of nature. Natural rubber, as a long-term crop, has a long time for investment and operation. ASEAN, although relatively few natural disasters, but the rain and pests such items as the uncertainty of risk also must be prevented.

(3) The constraints of investors

The factors needed in overseas investment include the abundance capital, the export technology, multi-disciplinary talent and capacity. The key are capital and capacity. The three state farms can be regarded as China's large-scale agricultural industry groups, but they are lack of capital because of so many businesses. Without capital, it will be hard to invest overseas. From the point of view of capacity, four special capacities are essential if the enterprises want to expand overseas: the ability to learn foreign markets, manage foreign employees, integrate resources in the foreign market and run foreign affiliates [8]. But those state farms have few international management expertises and have limited capacity in the management experience of overseas plantation and processing plants. Professional personnel who are well learnt in international practice, strong operation ability and adaptive to the different cultural backgrounds are lack. What's more, the state farms are speeding up internal management system reform, such as Hainan State Farms which was decentralized to Hainan province this year carried out a long-term contract with tappers. It has so many internal affairs to deal with and heavy burdens that would reduce the efforts of

foreign investment. In addition, each of the three state farms act separately, the collaboration and communication among them is not enough.

(4) The labour service export

Here natural rubber tappers, technicians and management personnel are discussed. Tapping is a labour-intensive production activity which labour intensification is heavy and working hours are long. A shortage and loss of tappers would come out with the development of society and economy and raise of people's living standards. Some countries, such as Malaysia, which is short of tappers, need to export the domestic tappers. Due to the strict importing foreign workers and the high cost of labour exporting, it's difficult to export. But countries such as Laos, the output of technicians are needed because more tappers need training. Exporting a certain number of tappers and technicians is also needed by other countries. What more important is the export of management personnel that are required to be good at rubber planting, management and foreign languages, familiar with international rules and situation where invested. Due to the work environment, the wages and the original stock of manpower, the local labour market is not opening up to China; labour service export becomes a problem. Localization project management, employment of local tappers, technicians and managers involved in the cross-cultural communication barriers are all problems.

3.3 Mode selection to cooperate

(1) The ownership design and investment mode selection

"Going Global" strategy is essentially the issue that foreign enterprises involvement of the ownership or the specific form access to overseas market. The pattern of ownership of overseas businesses has a set of design which needs to be clear, which are: take the form of authorized production and chain operation, no investment on the ownership; set up joint ventures in a foreign market and have a certain degree of intervention in the ownership; exclusive investment, share 100% ownership of the new enterprise. This decision-making is significant and strategic [9]. Then choose suitable investment mode. First issue is whether to take the way of merger, purchases or create when to construct foreign investment projects. The selections of creation are exclusive investment, joint investment or jointly operation etc. Second is to choose the method of capital subscription, in cash, in kind or intangible assets. For example, Guangdong State Farms and local enterprises build the processing plants in joint venture. Generally, the ratio of the former is 55% and the latter 45%. They share out bonus at the end of year. A period of time later, Guangdong State Farms would purchase shares and the plant becomes exclusive investment. To plantation renting, it would take the form of signing contracts, specifying the leasing year and investment amortized. The fellow offers lands and policy while the state farms offers technology and management personnel. It is clear that the investment is focused on controlling the enterprise operation management and the purpose is to obtain benefits.

(2) Investment business options

Investment business is nothing more than the plantation, processing and trade. It is proposed to construct the overseas processing trade projects. Taking domestic

equipments, technologies and capitals abroad to hold a joint venture, or build a new rubber processing plant to process standard or compound rubber that directly sell back to China's domestic markets, or to process foreign rubber and supply rubber products. Another processing operation is to use the rubber wood to produce wood products and furniture. To cooperate with those countries which have appropriate lands for natural rubber cultivation, such as to contract or lease the plantations, rent lands, or even buy lands and plantations to develop the large-scale natural rubber plantations in order to establish the overseas natural rubber production base. The construction of new plantations in "Golden Triangle" area can be combined with alternation of poppy cultivation [10]. To construct seed-breeding base (nursery) and set up the demonstration bases and the training and technical service centers, which has great significance in countries such as Myanmar and Laos. To set up overseas trade company for trade or imports & exports, building up market. The three businesses are different but connected, so the state farms can choose applicable business according to the reality.

4 Conclusions

The natural rubber "Going Global" strategy aims at the establishment of overseas natural rubber production base to ensure stable, adequate rubber supply for China. ASEAN countries which plant natural rubber are their first selection to develop overseas rubber industry. Since 2002, the three state farms have made substantive progress in renting lands for planting and setting up processing plants in ASEAN preliminary built up the overseas natural rubber production base. "Going Global" is a practical rather than theoretical issue. The article analyzed the practice on the three state farms "Going Global" strategy, and studied positive factors, constraints factors, and mode selection of cooperation. Clearly, "Going Global" strategy as the behavior of enterprises has constrains, not only the innovation is needed, but also the support of the country, especially in the macro-management and industrial policies to guide and support for better conditions. "Going Global" is practical rather than to say theoretical. It is informed that the progress of three state farms "Going Global" is far from the expectation which shows that constraint factors of cooperation are making into effect and the reality is complex. Natural rubber industry is resource-constrained, so it is reasonable to appeal "Going Global" strategy considering China's large amount of rubber consumption and imports. But the standpoint should be placed on how to promote the development of domestic natural rubber plantation. Countermeasures may include internal reform of management system and operation mechanism, external adjustment of the tariffs, etc. Come to this study, if the rubber industry development of those countries can be compared, the rubber resources of country invested can be analyzed, overseas and domestic experiences on rubber resources utilization can be summarized based on the future economy tendency and China's natural rubber rate of dependency and consumption demand, a clearer idea of co-operation may be obtained and an accurate viewpoint can be got.

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A Study on Countermeasure for Labour Force Shortage in Natural Rubber Industry with Reference to China-ASEAN Regional Integration

Zheng Xiaofei * **Fu Guohua** **

[Abstract]: A long with East Asian economy swift growth, China- this emerging and reforming economy- transits trade and capital flowing, with integrates unceasingly including Malaysia and other ASEAN countries. This phenomenon in natural rubber profession is performance outstandingly. The conclusion of this article which obtains through the investigation is: one of methods for solving labour force shortage in the natural rubber industry is to make China and the Association of Southeast Asian Nations further integration. China is the origin and also the solution.

[Key words]: China-ASEAN Region Integration, Natural Rubber Industry, Labour Force Shortage, Countermeasure

A. Introduction

From 2001, the Chinese rubber consumption surpassed the US for the first time, became the world biggest country of consumption and the importing country. At present, China imports the natural rubber 94% come from the various countries in ASEAN.

In August 2008, China imports natural rubber 261,540,497 tons, the value is 792,389,695 USD. From 2008 January to August, total of Chinese imports of natural rubber are 2,053,005,166 tons, up 4.163%, and the value is 5,361,708,576 USD, up 39.703 percent year-on-year growth. (Source: General Statistics Office, Haikou Customs)

In order to meet China's needs, the natural rubber plant scales in ASEAN countries expand suddenly, output large scale rise, what follows comes is in the natural rubber profession labour force shortage.

B. Background of investigation

After 1970s, along with the requirements of NR keep increasing in the global market, every NR planting countries in Asia as well as enhanced planting size, improved yield. The price of NR appeared a few fluctuations, but in the mass has kept increasing.

Particularly entered 21st century, the situation of the world didn't develop to the direction that the human being wished to, the conflicts between different countries are

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always happening, as a sort of strategic repertory material and also because of its special quality, the demands for NR become bigger and the functions cannot be substitute.

Summaries of Natural Rubber Production Prices in China unit :(Yuan/ton)

Date	Production Code	Quantity(ton)	Average price	Highest price	Lowest price
2008-10-08	CNR	1229	13645	14400	13400
2008-10-08	RSS1	120	20000	20000	20000
2008-10-08	SCR 5	549	20745	21500	19000
2008-10-08	SCR10	264	17914	18800	17500
2008-10-08	SCR20	147	18000	18000	18000
2008-10-08	SCR5(N)	315	18413	18600	18400
2008-10-08	SCR5(R)	525	19812	20000	19600
2008-10-08	SCR5(Z)	273	18508	18600	18400
2008-10-08	SCRG	252	17283	17500	17100

Source: www.e-hifarms.com.cn

Through reading literature and interviewing Chinese NR planting areas, I find that going with the size of planting NR is increasing, almost all Asian NR production countries have a pivotal problem at the same time, lack of labour force, it is the big challenge for future development of NR industry.

My investigation just comes from the problem, dissertates in three aspects, 1) reasons why the problem produced and its results, 2) how to solve problem, and 3) conclusions and suggestions.

C. Methodology

My study is based on literature induction and contrast argumentation.

First. Reasons for the problem produced and its results

I will cite two literatures from two Asian countries to induce and explain the reasons why the problem comes out.

A. Malaysia (quoted by Y.Bhg. Dato’ Dr. Michael Dosim Lunjew Secretary-General, Ministry of Plantation Industries and Commodities, Malaysia)

In Malaysia, labour shortage has been plaguing the rubber plantation industry and some of the smallholdings were even abandoned due to this problem. Figures from the Malaysian Agricultural Producers’ Association show that during 2003 the labour supply could meet only about 50 percent of the actual requirement in the estate sector.

The latest census carried out by the Rubber Industry Smallholders Development Authority (RISDA), in 2002 indicated that the vast majority of rubber smallholders are in the age groups of 50-60 years old or above 60 years.

B. Sri Lanka (quoted by R.D. Premadasa, Rubber Development Department)

Availability of skilled tappers is found insufficient since 10 years back in Sri Lanka. Two reasons are attributed to this. The heavy work but the payment is less; and

the social attitudes of the younger generations to find white collar jobs in town were the main problems.

From the above material, we can conclude and analysis the main reasons for the lack of labour force:

1. Dramatically expand the planting area.

For instance, at present, Thailand with an annual output of rubber about 1,720,000 tons. The rubber outputs of Thailand, Malaysia and Indonesia produce more than 70% in the world's total output. In 2007, Thailand natural rubber area under cultivation reached 2,359,305 hectares, production reached 3,056,005 tons; Indonesian natural rubber plantation area of 3,300,000 hectares, production reached 2,755,000 tons; Malaysia's natural rubber output reached 1,215,000 tons.

Except the three major rubbers producing countries are expected this year are likely to increase production, other countries are also increase their outputs. For example, Philippine natural rubber plantation mainly in the southern part of ZAMBOANGA SIBUGAY province, the area under cultivation in 2007 reached 31,329 hectares, production reached 134,715 tones.

2. The more and more increasingly aging labour forces, but young people come into the rubber plantation industry less and less. The average age of Malaysia rubber growers is 55.8 years old, 56.8 percent more than 56 years old. Other countries are also similar.

3. Heavy workload and poor conditions.

4. Compared with the cultivation of other crops such as oil palm, the rubber plantations with relatively low incomes.

Second. How to solve the problem

(1) "Procurement Group," "joint procurement", and the establishment of the ASEAN natural rubber direct trade relations.

China has many large companies; they spent more than 100,000 tons in the plastic per year. We can create conditions, such as: Michelin tires, fixed direct procurement standards, that is, the implementation of the Group of procurement; small and medium enterprises with plastic, through a good reputation, strength Strong marketing, implementation of joint procurement, processing of the Association of Southeast Asian Nations by the Chinese side of the business needs of processing standards; at the same time, it can be established domestic trade market, ASEAN to attract companies to set up the market, the direct supply, not through the establishment of the first The three new procurement system, that is, the natural rubber to ensure the quality and supply stability and reduce procurement costs.

(2) Joint venture to build natural rubber processing plants.

In the light of China's rubber resources, go out of the country the development of natural rubber plantation industry, is imperative. However, taking into account the strength of enterprises, should not be the first to buy, buy a rubber plantation, construction, "land reclamation in the near future, long-term effect," a production base. A more realistic approach is to organize domestic enterprises with the right conditions, brought from the domestic equipment, technology and capital with the existing

ASEAN cooperation in processing plants, or holding a joint venture, or build a new plant, according to domestic users of the standard rubber processing standard plastic or composite Rubber, in line with the standards of domestic production of rubber-based adhesive common enterprise, domestic direct sales. Chinese enterprises have the advantage of equipment, capital and other advantages, outside plant, will effectively reduce the cost of raw materials.

D. Conclusions and Suggestions

In general, the context is clear that size of planting NR is uneconomic and lack labour force in most main NR produce countries in Asia, the future of NR industry needs enough labour force to ensure its development.

Let the NR can keep remunerative price, depending on the standing cooperation by government, firms and smallholders. At the remunerative prices, firms and smallholders will be motivated to increase production as well as being more convinced about the future of the industry, thus more people will choose to plant NR, in order to take advantage of the latest high yielding clones.

Accordingly, the governments in different countries have to increase the investments, including infrastructures, human resources development and welfares for smallholders, and so on.

And big firms should unite much more smallholders to consolidate, new management skills and expertise will be introduced to these smallholders to assist them to be better organized and informed about NR planting. In this way, they can benefit from more useful management of resources resulting in reducing labour forces and costs, making better yielding.

In addition, to fetch the labour force in from other countries is another efficient way. The populations' distinction in different countries are huge, it can solve the short of labour force very practical.

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