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**Pulp and Paper Industries in Japan and Indonesia:
from the Viewpoint of Political Ecology**

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CHAPTER I

1.1. Introduction

In the early 1990s, *globalization* was greeted with euphoria. Capital flows to developing countries had increased six-fold in six years, from 1990-1996. Globalization encompasses many things: the international flow of ideas and knowledge, the sharing of cultures, global civil society, and the global environmental movement.¹ This paper focuses on economic globalization, which entails closer economic integration of the countries of the world through the increased flow of goods and services, capital, and even labor. The great hope of globalization is that it will raise living standards throughout the world; give poor countries access to overseas markets so that they can sell their goods, allow in foreign investment that will manufacture new products at cheaper prices, and open borders so that people can travel abroad to be educated, work, and send home earnings to help their families and fund new businesses. The main engine for this new phase of globalization is the steady reduction of the *transport costs* entailed in the international movement of goods and services, people, money and capital, as well as information, technology and knowledge. Fujita further explained that “this continual reduction of transport costs has been promoting the rapid growth of international trade and investment, leading to the new phase of globalization involving most countries in the world. Between 1985 and 2003, for example, world trade increased at an average annual growth rate of 7.7 percent”.² Globalization of the world economy, however, has not been progressing uniformly around the world. This has been illustrated by NASA’s satellites, which show three sparkling regions, NAFTA (*North-American Free Trade Agreement*) having the largest GDP size (US\$11,086 billion), the next brightest region being the *European Union* (EU-15), which had a GDP of US\$7,926 billion, and *East Asia*, which had a GDP of US\$7,334 billion in 2000. From the viewpoint of its development over the thirty-year period from 1970 to 2000, the GDP of East Asia grew most rapidly (20.7 times), while the GDPs of the EU and NAFTA grew at roughly the same speed (EU 9.9 times and NAFTA 9.4 times). The reason behind the fastest rate of GDP growth, according to Fujita, is that economic *interdependency* and the *intra-regional trade share*, which represents the share of international trade (export plus import), has been growing stronger within East Asia compared with all other countries in the world. For example, the trend of Japan’s trade value with ASEAN and China rapidly increased; in 1990

¹ For further information see Stiglitz, Joseph E, *Making Globalization Work: The Next Steps to Global Justice*, Allen Lane-Penguin Books, 2006, New York, 2006, p. 4.

² Fujita, Masahisa, “The Development of regional Integration in East Asia: From the Viewpoint of Spatial Economics,” paper presented at The 2nd World Forum on Chinese Studies, *Shanghai Academy of Social Sciences*, September 21-22, 2006, pp. 2-3. See also Fujita, M (et al.) (2000). *The Spatial Economy: Cities, Regions, and International Trade*. MIT Press.

Japan-ASEAN trade reached ¥ 10 trillion, ¥ 15 trillion in 2000, and ¥17.15 trillion (US\$149.1 billion) (14.5%) in 2005.³ On the other hand, it happened that Japan's trade with China also increased from ¥ 2.5 trillion in 1990, to ¥ 8.9 trillion in 2000, and ¥ 21.6 trillion (17%) in 2005.⁴

Bilateral trade between Japan and Indonesia has been on an increasing trend, in 2003 it reached US\$23.6 billion, US\$27.7 in 2004, US\$30.04 billion in 2005, and US\$28.4 billion in 2006.⁵ From this figure, Indonesia alone among the ten ASEAN members clearly shows the largest increase (19.04 percent) in the total Japan-ASEAN bilateral trade of US\$149.1 billion (2005). Indonesian non-oil and LNG export commodities to Japan reached US\$18.6 billion in 2004 and US\$20.7 billion in 2005. Meanwhile, oil and LNG reached US\$ 8.0 billion in 2004 and increased to US\$ 9.1 billion in 2005. By contrast, Japanese exports to Indonesia, which are mostly machinery, electronics, pharmacy, spare parts, and so on, reached US\$ 9.08 billion in 2004 and increased to US\$ 9.2 billion in 2005. In fact, Indonesia had a trade surplus, which mostly derives from crude oil, LNG and other commodities, but the values are considered to be very low (2.70 percent), and there is still more room for improvements, according to the Indonesian President Yudhoyono's address in front of the Japan Chamber of Commerce and *Nippon Keidanren* (Japan Business Federation), when he visited Japan on November 26-29 (*The Japan Times*, December 2006). Japan and Indonesia agreed to boost the bilateral trade value by 2015, by signing an EPA (*Economic Partnership Agreement*) schema. By establishing the EPA this year, in 2007, it is hoped that the EPA will make possible an improvement in the capacity for Indonesia to export more commodities to Japan, and that the market access will broaden, especially for small and medium-size enterprises, to allow them to compete in the Japanese market.⁶

This paper focuses on the leading commodities, pulp and paper products, which have an access into the globalized market from the viewpoint of *capital flows, goods, services, technology, and labor*. In this chapter, we aim to understand the development of pulp and paper by using the framework of '*political ecology*,' which highlights the movement of actors. For instance, what is the role of direct actors (government and private sector) on the development of the pulp and paper industry. Also the role of indirect actors (NGOs, academics and local people) will be examined from the point of view of launching critiques on the impact of environmental pollution by the companies. The discussion is extremely interesting when exploring the role of the respective actors from both upstream and downstream.

³ See *The Japan Times*, December 8, 2006. And *ASEAN-Japan Statistical Pocketbook*, 2006, p. 49.

⁴ *Ibid.*

⁵ *Japan Customs* and reprocessing by the Trade Section Officer, Indonesian Embassy, Tokyo, 2006. The 2006 account covers the period from January until November, the total amount including December may be higher. From the viewpoint of total trade between Japan and all world countries, Indonesia accounted for 2.70 percent (US\$30.04 billion) in 2005.

⁶ See speech from the Indonesian Ambassador in Japan (Mr. Jusuf Anwar), "Japan-Indonesia's Bilateral Relations," in the *Japan Times*, November 27, 2006.

The development of pulp and paper industries in Japan and Indonesia are quite fascinating as these include currently the largest producers of pulp and paper such as the Oji and Nippon Companies from Japan and APP (Asia Pacific Paper) and APRIL from Indonesia, and are clearly categorized as *Multinational Corporations* from the viewpoint of obtaining equity share, labor recruitment, and accessing products to the market.⁷ For instance, the Oji and APP companies have conducted aggressive mergers with other companies to boost production, expand their factory branches and markets, obtain better access to raw material (tree) plantations overseas, and have listed their companies on the International Stock Exchange Market to obtain equity shares to expand their business.

1.2. Background

Japan launched her development and modernization in many sectors for civil purposes from the 1950s, after World War Two. From the 1930s to the end of the Second World War, 90 percent of Japan's industrial production capacity was allocated to military purposes (Hoshino, 1992: 65). Focusing on pulp and paper became one of the very important strategic decisions, and currently this sector is ranked number 13 among the 20 largest manufacturing industries in Japan, which totals Y6.8 trillion and absorbs 34,839 employees. Referring to the emergence of the pulp and paper industries, it was noted in a valuable speech in the memoirs of Shibusawa Eiichi one of the founders of the new Japan) that, "in order to attain Japan's development as a modern nation, we have to do a lot of things. The important thing is to promote the printing industry in order to publish a great number of newspapers and books which are conveniently available to everyone."⁸

During the 1960s, Japan's GNP growth rate was over ten percent, while the growth rate for European countries was five percent. It is obvious that with this high an economic growth rate within such a short period some social problems were bound to result. By the late 1960s, labor shortage had become one of the major problems, and automation was extensively introduced in both production as well as administrative branches. By then, the motorization of Japan had also substantially progressed. Besides, natural resources such as crude oil, iron ore, wood chips, and high quality coal were imported and major industries were built very close to residential areas along the Pacific Ocean coast from Tokyo, through Yokohama, Nagoya/Kobe, Osaka and on to Kyushu (Kitakyushu, Fukuoka, etc.). The Japanese consumption of resources from Southeast Asia and other regions has had a great impact on both the economic development and environment of the region. At issue here is one central fact—namely that whereas Southeast Asia is rich in natural resources, Japan is

⁷ For further information, see Ramstetter, Eric D & Sjolholm, Frederik, *Multinational Corporations in Indonesia and Thailand: Wages, Productivity and Exports*, New York: Palgrave Macmillan, 2006, pp. 3-5.

⁸ See the *History of Oji Paper*, Published by Oji Paper Co, 2004, p. 163.

one of the world's most resource-poor and least self-sufficient countries. Hence resource acquisition has been a vital part of Japan's national economic development and foreign policy throughout the history of the country's industrialization, and Southeast Asia has been a natural focal point in this strategy (Cameron, 1997: 69).

On the other hand, among Southeast Asian countries, especially Indonesia as one of the newcomers, her industries were launched since the late 1970s, while Japanese investment was entering, and initially began with local partners for developing many industrial sectors. Japan has been an important influence in environmental changes in Southeast Asia through the impacts of consumption, overseas economic activity, and international environmental policy. Japan is a major economic force, contributing approximately 13.8 percent of the world's economy with ASEAN countries, and just 2.70 percent with Indonesia.⁹

Pulp and Paper Industries

In 1987, based on the report, there were 36 pulp and 41 paper factories in Indonesia. Among these factories, 12 were integrated into larger pulp and paper companies, such as Indah Kiat, Kertas Kraft Aceh and Kertas Leces. As an illustration, the Board of Coordination and Capital Investment (*BKPM*) stated that until July 1991 there were 82 approved pulp and paper companies. 72 factories built with domestic investment (*PMDN*) were approved, with total investment recorded at Rp.15.5 trillion and 10 factories built with foreign investment, with total recorded investment at Rp.4.8 trillion. Total investments for the pulp and paper industry were Rp.20.3 trillion. Meanwhile, production capacity for all factories was 7,521,402 tons annually. Most paper produced in these factories was industrial paper, 4,483,177 tons annually, or 59% of production. In contrast, paperboard production, such as newspaper and writing paper, was 2,884,532 tons, or 38%. Other paper, such as tissue, cigarette paper and household paper production totaled 153,702 tons annually, or 28% (*Perjalanan Secarik Kertas*, 1992: 34-36).

Environmental Impacts

During the first phase of high economic growth in the 1950s and 1960s (in the case of Japan), the greatest environmental pollution problem was caused by dust and other airborne particulate matter. The main source of energy at that time was coal. This situation continued into the 1960s, so that by 1961 a major iron and steel complex in Yahata, northern Kyushu, was pouring 27 tons of particulate matter per day into the city's air, and in Kawasaki City, Fuji City, and in the Tokyo Bay industrial area the Edogawa River and Tagonoura Harbor were also polluted with 23 tons. Along with the black smoke there was also a great amount

⁹ See *ASEAN-JAPAN Statistical Pocketbook*, 2006, p. 10.

of red smoke that spread over the sky (Hoshino, 1992: 68-69). Sulfurous acid gases are invisible and take their toll in silence, but black smoke can easily be seen and therefore everybody recognizes it as a health hazard. The effluents from sulfuric-acid-based pulp processing industries are the same in this regard, that is, they are not directly and immediately apparent as the cause of environmental problems. If annual production levels reach 100,000 tons, over 160,000 tons of wastes are produced. These red and black wastes discharged from the pulp-using production units found their way into natural waterways such as rivers and then into ocean systems. In this manner rivers and ocean estuaries were visibly polluted, and this destroyed fish resources, thereby compromising the viability of the fishing industry.

Protest on environmental pollution was launched demanding ‘compensation’ from fishermen, farmers, grassroots movements and NGOs. Because of all this destruction, the role of the government and National Diet (Parliament) was necessary to make legislation that was enacted in 1958 on governing water quality and industrial effluents. Eventually the Environment Agency was established in 1971, the main task of which is to inspect pollution issues.

In the case of environmental pollution which also occurred among ASEAN countries, especially in Indonesia where it was the cause of deforestation, subsequently affecting environmental damage such as flood and soil erosion in the rainy season and drought and forest fires in summer. This critical condition caused suffering for local people in the summer season, especially for those living in the hinterland among forest areas, which are the so-called “high cost” economic burden areas because of the water transportation cost from the cities to the villages such as in Kalimantan, Sumatra and Papua.

1.3. The Scope, Goals and Objectives

The scope of this study is limited to the area of Japan and Indonesia. Both countries have currently emerged among the largest pulp and paper industries in Asia in the early 2000s. In the case of Indonesia, which has vast forest areas (120 million hectares) providing raw materials for forestry industries (logging, plywood, pulp and paper), most of these products are exported to Asia, especially to the Japanese market.

The goal of this research is to examine the applicability of lessons from Japan’s experience with pulp and paper industries to Indonesia.

To fulfill this goal, research objectives are mentioned below:

- 1) to clarify direct actors’ role (government and private sector) on the pulp and paper industry policy in both Japan and Indonesia;
- 2) to analyze firms and the industrial level from the viewpoint of the development (capital,

- raw materials, production, R&D, and so on) of pulp and paper industries;
- 3) to explore the environmental pollution impacts of pulp and paper industries in Japan and Indonesia.
 - 4) to discuss the critiques from indirect actors (NGOs, academics, and local people) regarding environmental pollution;

1.4. Methodology

Theoretical Framework

This study uses “political ecology” as an analytical framework. We must clarify what we mean by political ecology. Many scientists (Paterson, 2000; Bryant, 1997; Vayda, 1983; Blaikie and Brookfield, 1987; Abe Ken-ichi, 2003) define it differently. Paterson (2000) notes that, “political ecology (is) an approach that combines the concerns of ecology and political economy to represent an ever-changing dynamic tension between ecological and human change, and between diverse groups within society at scales from the local individual to transnational as a whole.” Other scientists define “political ecology” as “a framework to understand the complex interrelations between local people, national and global political economies, and ecosystems” (Blaikie and Brookfield, 1987). The concept has been adapted in a variety of ways, such as Third-World political ecology, where (Bryant, 1992) notes that: “political ecology may be defined as the attempt to understand the political sources, conditions and ramifications of environmental change.” Most current political ecology tends to overlook ecological dynamics and focus upon the structure of human systems (Rocheleau et al., 1996). Abe Ken-ichi (2003) defines political ecology, as “a collective name for all intellectual efforts to critically analyze the problems of natural resource appropriation and political economic origins of resource degradation, be they for the purpose of academic study or practical applications.”¹⁰ In other words, political ecology is concerned with the political dimensions of natural resource use and the subtleties of those politics. Apparently, the scope of political ecology has been referred to as ‘a method of analysis,’ rather than a unified scientific discipline or sub-discipline, which is usually characterized by a set of related ideas, premises, and theories.

Meanwhile, (Vayda, 1983) commented that political ecology is similar to a method applied by human ecologists analyzing policy-relevant environmental questions known as ‘progressive contextualization.’ This approach starts with actors, in this case direct resource users, and considers the contexts within which they act or do not act in a particular way

¹⁰ Abe, Kei-ichi (et al.), *The Political Ecology of Tropical Forests in Southeast Asia: Historical Perspectives*, Kyoto University Press, Japan, 2003, p. 3-4

towards a resource. This approach also attempts to explain why people use the environment in particular ways, sometimes causing resource decline or degradation detrimental to their own and others' uses of the resources (Peluso, 1992).

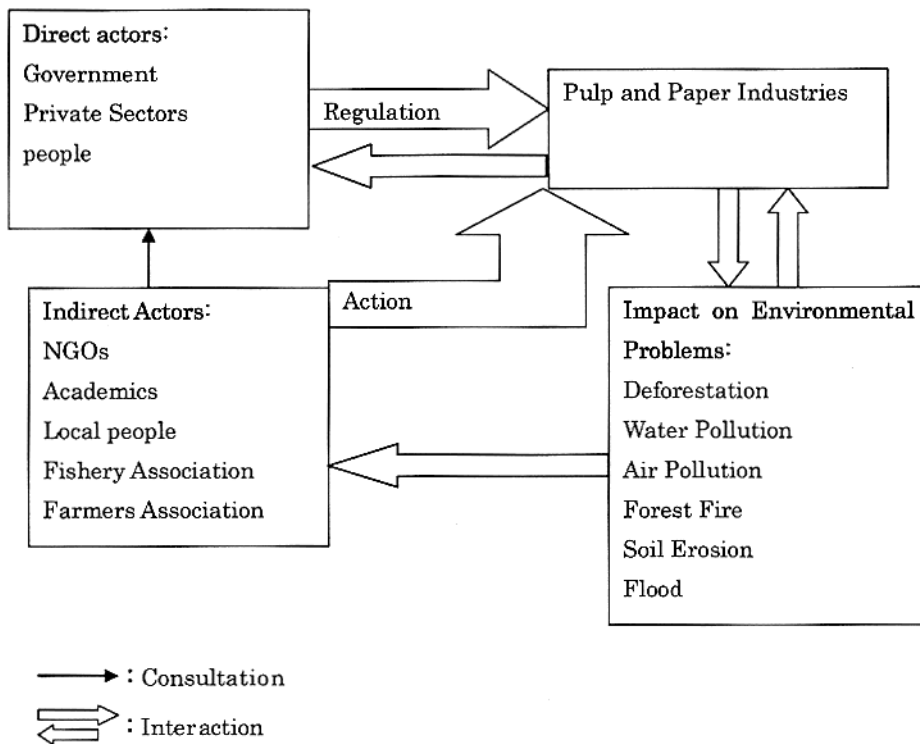
From the above definitions, apparently, Bryant's definition, which emphasizes 'putting politics first' on the political ecology of sustainable development aspects is more appropriate to pulp and paper industries in Japan and Indonesia. There are three reasons for this. First, that 'political and economic pressure' from the government's political elite in Indonesia has been predominantly colored on the pulp and paper industries for three decades. Second, Japan is a particular case in which the development of the pulp and paper industries was predominantly initiated by the private sector, compared with the intervention by the political elite in Indonesia. Third, the implication of political and economic pressure, particularly in Indonesia, upon the 'ecological' perspective was ignored by government bureaucrats and the private sector, which subsequently had negative effects, such as forest degradation and deforestation.

'Political ecology' is a framework with which to approach the subjects mentioned. It is a generic term used in this research to connect two levels of study. This study highlights the viewpoint of politics on the study of environmental disruption. It includes small-scaled studies centered on local society, such as pollution in Edogawa River in Urayasu, Chiba Prefecture, Japan, and the Siak and Kampar Rivers in Riau (e.g., cultural anthropology, applied anthropology) and a large-scale study from the national, regional and worldwide standpoint, such as pulp and paper products distribution and raw materials (e.g., political economy). After reviewing existing studies, I will adopt in this study a framework focusing on the movement and logic of stakeholders (actor analysis) among other frameworks of political ecology.

Actors' Movements

This paper will concentrate on actors' movements with concern for two issues, namely the identification of actors and the role of actors. Observing the above description, there are two critical reasons for the identification of actors' movements in the pulp and paper industries in Japan and Indonesia. Firstly, it is necessary to clarify whether direct actors can be categorized as the government, local people, or business (local and transnational). Secondly, it is necessary to review indirect actors such as grassroots movements, and the role of local government, academics, NGOs, and local people (*Figure 1.1*). On the other hand, it is very significant to monitor the role of NGOs, academics and local people in responding to environmental pollution implications from the pulp and paper industries.

Figure 1.1: Conceptual Framework of Political Ecology of Pulp and Paper Industries and Its Environmental Problem.



The government (jointly performed by the executive and legislative branches) as an actor on pulp and paper sector policy is represented by launching legislation and issuing permission, monitoring and giving sanctions to the pulp and paper industries. On the other hand, businessmen represent the private sector, which has legal concessions with time limits of 25 to 30 years on operating logging, industrial timber plantation (HTI), and implementing the replanting of trees in the state productive forests, based on laws and regulations. The operational mechanisms are carried out in the logging, timber, and pulp and paper industries, and the paying of taxes for government income in the Forestry and Industry sector. In contrast, the government (Department of Forestry and Department of Industry) are responsible through their apparatus for controlling all these operations and sanctions.

In Indonesia, the Constitution of 1945, article 33 (item 3) notes that: “land and water and the natural resources therein shall be controlled by the state and shall be made use of for the greatest welfare of the people.” It was also written in the Basic Agrarian Law (1960) in terms of land-use rights, that all forested land and natural resources are ultimately owned by the state as “an Authoritative Organization of the entire nation.” Other sections involving forestry include: “In order not to harm the public interest, excessive ownership and control

of land are not permitted.” In this case, based on the two reviews of the basic Forestry Law, the role of the state in the forestry sector is significant concerning the utilization of natural resources for the welfare of the people. Based on Forestry Act/No. 41/1999, the state allows the private sector (businessmen), to promote capital accumulation, control of forest management, and gives sanctions to the private sector if they breach the regulations.

Seemingly, indeed there is a relationship between both roles, whether direct or indirect, of pulp and paper industry actors. If both parties truly cooperate and create symbiotic relations in the near future based on sustainable forest management, deforestation will be prevented and a reforestation program to provide raw materials for the pulp and paper industries will be implemented in Japan and Indonesia.

1.5. The Expected Results

- 1) to provide information on the significant role and interaction among stakeholders on the pulp and paper industries;
- 2) to provide information on the necessary critiques for better improvement of pulp and paper management from the grassroots movement, local people, NGOs, and academics;
- 3) to recommend better implementation of sustainable pulp and paper industry development in the future;

1.6. Method of Research

The main data and information for this study will be obtained through the following methods:

- 1) Downloading from Internet websites;
- 2) Literature review of many books, journals, newspapers in the library and resources at IDE library, as well as other libraries in Japan and Indonesia;
- 3) In-depth interviews with purposive sampling among pulp and paper industry stakeholders;
- 4) Field observation for case studies on the pulp and paper industries in Japan and Indonesia.

PART ONE: PULP AND PAPER IN JAPAN

CHAPTER II JAPANESE INDUSTRIALIZATION

Introduction

The paper industries were rapidly developed in Japan. Currently, Japan is placed in third rank, and produces 30.8 million tons of paper, being among the major producers of pulp and paper in the world. Pulp and paper is categorized number thirteen (13) among the largest manufacturing industries in Japan, total (sales?) reaching Y6.8 trillion and absorbing 34,839 employees. From this perspective, it is significant to discuss the role of government as direct actor, especially the Meiji government. This government launched ‘affirmative action’ towards political stability and economic development. In the case of economic development, the Meiji government launched its policy by establishing facilities such as banking, infrastructure, inviting foreign experts to build factories, and even sending scholars to study western civilization. This paper focuses on the role of government in launching policy and regulations for paper industries in Japan.

2.1. The Role of Government

The role of government in Japanese economic development has been regarded as very significant. Initially, the group of leaders who brought about the Meiji Restoration formed “the government,” and it laid the foundations for economic development at the same time that the Restoration occurred. Earlier successes provided the basis for subsequent economic policy. From this perspective, one might hold that economic development in Japan is wholly attributed to the strong guidance given by the government.

The first steps in modern economic development were possible when the country was united under the very strong and far-sighted centralized Meiji government, which aimed at ‘the enrichment and strength of the nation’ through military and economic development. Particularly important is the fact that the Meiji government was active not only in framing political and economic policies, but also in implementing social changes. The government maintained political stability, built a mass education network, an industrial order, and achieved political strength and empire. By the end of the Meiji Period (1868-1912), Japan was one of the world’s great powers, the envy of some neighbors, and master of others.¹¹

¹¹ For further information about the “Transition of Tokugawa rule to the Meiji era,” see Marius B. Jansen “Tokugawa and Modern Japan,” in John Hall & Marius Jansen (ed.), *Studies in the Institutional History of Early Modern Japan*, New

These achievements, the role of the government in Japanese political stability and economic development (industrialization), have been regarded as having been very significant. The government led the industrial development. They modernized the old factories set up by the shogun and lords. They built paper industries (1872), a railway from Tokyo to Yokohama in 1872, improved the roads, established the post office (1871), constructed ships for a navy and merchant marine, founded Tokyo Electric Light (1886), Tokyo Gas (1885), built textile mills before 1890, and later, iron and steel works, engineering plants and shipbuilding yards, especially in north Kyushu and in the Osaka and Tokyo areas (Prue Dempster, 1969: 175-176). In 1877 the government sponsored a great exhibition in Tokyo to spread the knowledge of new farming and industrial methods. The government also sold the new factories cheaply and many passed to ex-samurai families, who gradually gained more and more influence as they built up trade, industry and banking concerns, and became the great financial groups or *Zaibatsu*,¹² of which Mitsui, Mitsubishi, Sumitomo and Yasuda were the largest. Almost every industry in Japan today had its beginnings in those established by the Meiji Government.

A steady flow of capital was essential for the continuation of this rapid industrialization. Little came from abroad but at home, although at first it came from taxes and samurai bonds, soon industry made a vital contribution from its profits. As they paid little to their workers, who were used to living frugally, most of the profits could be ploughed back into industry and the rate of capital formation was very high. Therefore, in many cases, private enterprises went along with government policies in building the infrastructure for industrialization, and then went their own sweet way once that foundation had been built. The fact that the Meiji government was dictatorial but not ‘totalitarian’ implies that there was room for other economic forces to operate. Moreover, such freedom was admitted in a wide range of economic activities. This is one reason why the Japanese economy could enjoy some advantages associated with competitive markets without falling victim to monopoly capital or extreme protectionism. The importance of a government in economic development is usually judged by the great number of policies it has adopted. In Japan, there is considerable discrepancy between the declared policies of the government and the way in which those policies were in fact administered. However, it is generally believed that the economic development of Japan can be explained largely by the role of the government.

Further, the role of group of Japanese modernizers such as Fukuzawa Yukichi, Shibusawa Eiichi, Tokugawa Yoshinobu, Okuma Shigenobu, Ito Hirobumi, Soejima Taneomi, Mori Arinori, and so on, who contributed to the Meiji Restoration and the formation of “the government,” and the government laid the foundation of economic

Jersey: Princeton University Press, 1968, p. 318.

¹² *Zaibatsu* means the big traders, which eventually became the big groups of financial and private companies in the Meiji era such as the Mitsubishi, Mitsui, Sumitomo, Yasuda, etc.

development at the same time as the Restoration occurred.¹³ Nakayama highlighted this by considering briefly the policies of the government in the early years of the Meiji period. First, the government sought to maintain the country's independence. Second, it sought to ensure that the social order was maintained domestically, and strove to promote political unification as the basis for economic activity. Third, it removed the legal restrictions on changing employment, and thoroughly reformed existing institutions. Fourth, it established a foundation for greater productive efficiency by making sweeping revisions in the legal, educational, tax, and currency systems (Nakayama, 1975: 121-122). From this perspective, the role of the Meiji government was not necessarily considered to be totalitarian, despite its politically dictatorial character. This is of some importance for an overall evaluation of the government's role in Japan. The great emphasis placed on the role of the Meiji government in laying the foundations for development stands equally beside the role of the private sector. However, these foundations alone did not sustain Japan's economic growth. There must have been other vital elements which worked to promote further progress after the basic foundations had been laid. The major issue, then, is the relationship between the government and these other vital elements such as the role of the private sector.

2.2. Government and the Private Sector

The success of the government in laying the basic groundwork during the early years of Meiji, along with the support which was enlisted from the public, was ultimately due to the close coordination of its efforts with those in the private sector. This meant that the government had responsibility towards the private sector in the encouragement of creative private initiative, enterprise and implementing business decisions. Thus, any assessment of the government's contribution to economic progress necessitates a closer examination of the role played by private enterprise, and consideration of the relationship between the government and the private sector. Therefore, we must pay attention to the variety of institutions through which the government either directly or indirectly influences the decisions of private sector. The tax system, tariff policy and general industrial policy, including the relative weight given to agriculture and the small or medium-sized enterprises, all deserve mention (Nakayama, 1975: 124-125).

One of the first steps of the Meiji leadership was the concentration of the major productive facilities in the hands of the government. So, the government forged ahead with national policies and production targets which were largely non-economic in nature. Its

¹³ They were brilliant young boys who were sent to abroad (to the United States and Western Europe to study Western sciences and industrialization) at the end of the Tokugawa era and eventually became pioneers of 'modernization' in the transition to the Meiji government. For further information, see Harootunian, *Toward Restoration: The Growth of Political Consciousness in Tokugawa Japan*, Los Angeles: University of California Press, 1970:321-327.

initial intention was to firmly assert its leadership over the private economy. Its policies for manufacturing were similar to those pursued by the German government, which from the beginning sought to establish government control to some extent. The necessities of guidance by the state were accepted as a basic premise, primarily with an eye on developing the productive power of the nation. Obviously, from this basic premise emerged the close contact between the state and the large enterprises, the intimate relationship which later developed between the major banks and the industrial giants, and the appearance of various semi-official organizations which sought to promote cooperation and autonomous control in all private industries.

By way of contrast, it is interesting to note that the Meiji government made no attempt to interfere with or control the smaller enterprises. The only exceptions were in the silk and tea industries which provided a stable source of exports during the initial years. Within these two industries, which were characterized by a vast number of small enterprises, the government also sought to set up a system of 'autonomous' control similar to those found among the large enterprises. In this case, as among the large firms, the government not only promoted cooperation and autonomous control, but even positively promoted business mergers in some industries which were in need of large amounts of capital and technological renovation. Thus, the relationship between the government and the large enterprises rapidly deepened. This in turn accelerated the emergence in the long run of a firmly implanted plutocracy; particularly the *zaibatsu*, which stood quite apart from the government so that the entrepreneur or respectable businessmen could not openly occupy a top position in the political arena. The entrepreneurs in the *zaibatsu*, which had close contact with the government, came from the *samurai* class in most cases. They shared with the political elite the same social standing and cultural background. Nonetheless, the *samurai class* could not occupy authoritative political positions while still being entrepreneurs. This basic fact suggests that the relationship between the government and the big enterprises was much more narrowly defined than might have been expected from a limited consideration of the government's political objectives alone. In this case, the scope for independent initiative by those in private industry, as well as their ability to compete among themselves and with the government, had not been greatly limited (Nakayama, 1975: 126-127).

In many cases, private enterprises went along with government policies in building the infrastructure for industrialization, and then went their own sweet way once that foundation had been built. They were, in other words, quite opportunistic. Thus, while the controls of the government were considerable, in fact only a few industries were subject to the direct control of the government, at least on paper, because they were very strategic industries. Paradoxically, it might rather be said that Japanese enterprises enjoyed comparatively greater competitive freedom in the prewar period despite the seeming omnipresence of government controls. Moreover, it might also be pointed out that the government devoted great efforts to creating favorable conditions for free enterprise, and eagerly awaited the fruits of such

competition.

After the establishment of many new industries in Meiji times the period from 1880 to 1931 was one of political stability and expansion of industry in scope and in scale. For instance, the Sino-Japanese war of 1894-1895 provided an impetus to industrial development, while the unexpected success of the Japanese encouraged them to even greater patriotic fervor and brought the country to the notice of the great powers as a new force to be reckoned with the Far East (Prue Dempster, 1969: 176). She extended her frontiers, using her new military power, to build up an empire in the east. She gained control over Formosa (Taiwan) in 1895. In 1905 she defeated Russia and acquired Southern Sakhalin and in 1910 moved into Korea. This brought her growing power to the notice of the West.

CHAPTER III

DEVELOPMENT OF THE PULP AND PAPER INDUSTRY

Introduction

The role of academics such as Eiichi Shibusawa, whose brilliant ideas would encourage the conditional sphere to establish entrepreneurship among Japanese, was crucial. Among the entrepreneurship ideas was one to establish the Oji Paper Company as the pioneer of the pulp and paper industry in Japan. This paper discusses the development and significance of the paper industry, raw material, and its impact on the environmental problem.

3.1. The Pioneer of Pulp and Paper

As previously discussed, the role of Japanese modernizers who formerly studied in Western Europe and the United States was very significant in the launching of the modernization of Japan. In this sense, one of the great figures who built the Meiji economy, Shibusawa Eiichi (1840-1931), was unique. He started his post-Restoration career in the Finance Ministry, but soon left it to become a banker-entrepreneur.¹⁴ He founded one new company after another; in all, he was associated with more than five hundred enterprises. Yet he created no industrial empire. Among the companies he supported the foundation of were the Oji Paper Company (1872), Tokyo Marine Insurance (1879), Tokyo Gas (1885), Tokyo Electric Light (1886), Tokyo Chemical Fertilizer (1887), Shinagawa Glass (1888), and Ishikawajima Shipyard (1893). The two spearhead industries of Meiji economic development were cotton spinning and railroads. Shibusawa was active in both. Shibusawa was also instrumental in establishing the Tokyo Stock Exchange (1878) and the Tokyo Chamber of Commerce (1878).

Focusing on the development of pulp and paper industries, it is better to refer to a valuable speech of Eiichi Shibusawa as one of the founders of the modern Japan. He said, “Western civilized nations have attained their full development in every field. This is because they have devoted themselves to the cultural and scientific development by promoting the spread of higher education. In Japan we have to strive for cultural and scientific development. In order to attain Japan’s development as a modern nation, we have to do a lot of things. The important thing is to promote the *printing industry* in order to publish a great number of newspapers and books which are conveniently available to

¹⁴ For further information about the role of Shibusawa Eiichi in business, see Teruko Craig (translator), *The Autobiography of Shibusawa Eiichi: from Peasant to Entrepreneur*, University of Tokyo Press, 1994, pp. ix-x.

everyone.”¹⁵

These words were very influential in encouraging private companies and Japan’s government to launch modernization programs, one of which was to further develop the *pulp and paper industries*. Currently, these industries hold a very strategic position and are subsequently categorized number 13 among the 15 largest *manufacturing* industries in Japan, whose total sales amount to Y6.8 trillion and which have absorbed 34,839 employees (Table 3.1). The largest manufacturing industry shown is transport machinery whose total sales amount to Y49.5 trillion, general machinery, Y24.8 trillion, in second place, and chemicals, Y23.1 trillion, in the third rank.

Based on Pulp and Paper Statistics 2006, which reported that the development of this industry reached 21 units for pulp manufacturers with a production of about 10.6 million metric tons in 2004, rapidly increasing to become 10.7 million in 2005. Although, at the same time Japan imported about 2.5 million metric tons of pulp from many countries in 2004, this decreased to 2.3 million in 2005 (Table 3.2).

Table 3.1 Pulp and Paper among the largest Manufacturing Industries in Japan

| Manufactures | Total Amount Y (trillion) |
|---|---------------------------|
| 1. Transport Machinery | 49.5 |
| 2. General Machinery | 24.8 |
| 3. Chemical | 23.1 |
| 4. Foods | 21.9 |
| 5. Electric Appliances | 17.5 |
| 6. Electronic Parts, Devices | 17.3 |
| 7. Information Communication Machinery | 12.6 |
| 8. Metal | 11.9 |
| 9. Steel | 11.6 |
| 10. Beverage, Tobacco, Feed | 10. |
| 11. Oil Products, Coal Products | 9.6 |
| 12. Plastic Products | 9.6 |
| 13. Pulp, Paper, Paper Converted Products | 6.8 |
| 14. Ceramics | 6.7 |
| 15. Printing and Allied Industries | 6.6 |

Source: Census of Manufactures Report by Industries (METI, 2003); See also Japan Pulp and Paper Co., Ltd, 2005, p. 5.

¹⁵ For further information, see *The History of Oji Paper*, published by Oji Paper Co., Ltd, 2004, p. 163.

Table 3.2 Pulp Imports by Origin (2005)

(In metric tons)

| Origins | Grand Total |
|--------------|------------------|
| Canada | 820,470 |
| U.S.A | 585,524 |
| Brazil | 322,861 |
| New Zealand | 229,396 |
| Indonesia | 132,835 |
| Chile | 95,426 |
| Russia | 57,658 |
| Sweden | 48,370 |
| Finland | 15,548 |
| South Africa | 10,960 |
| China | 6,294 |
| Other | 34,714 |
| TOTAL | 2,360,056 |

Source: Ministry of Finance, 2005; Pulp & Paper Statistics 2006, p. 11.

Meanwhile, paper and paperboard manufacturers rapidly developed to 419 units and their production was 31.3 million M3 tons in 2005 (Table 3.2). Japan also at the same time exported recovered paper to other countries (Table 3.3).

Table 3.3 Recovered Paper Products

(In metric tons)

| Year | Total net paper and paperboard supply for domestic consumption |
|------|--|
| 2001 | 31,071,938 |
| 2002 | 30,666,872 |
| 2003 | 30,929,580 |
| 2004 | 31,383,951 |
| 2005 | 31,380,357 |

Source: Ministry of Economy, Trade and Industry; Ministry of Finance 2005; Pulp & Paper Statistics 2006, p. 12.

Table 3.4 Recovered Paper Exports by Destination 2005

| Countries | Amount (in metric tons) |
|--------------|-------------------------|
| China | 3,108,449 |
| S. Korea | 177,430 |
| Taiwan | 169,819 |
| Thailand | 165,181 |
| Vietnam | 53,272 |
| Philippines | 22,982 |
| Indonesia | 7,656 |
| Other | 5,693 |
| TOTAL | 3,710,482 |

Source: Ministry of Finance 2005; Pulp & Paper Statistics 2006, p. 12.

Table 3.5 Top 12 Companies Financial Results for March 2005

(Billion Yen).

| Company | Sales | Profit after tax | Total assets | Employees | Profit to sales ratio |
|----------------------|---------|------------------|--------------|-----------|-----------------------|
| Oji Paper Co | 1,185.1 | 43.3 | 1,606.2 | 18,634 | 2.7 |
| Nippon Paper | 1,179.7 | 24.4 | 1,530.0 | 13,774 | 1.6 |
| Daio Paper | 395.4 | 4.3 | 638.1 | 7,974 | 0.7 |
| Rengo Co | 391.2 | 10.9 | 424.7 | 9,385 | 2.8 |
| Mitsubishi Paper | 234.7 | 24.7 | 319.5 | 4,902 | - |
| Hokuetsu Paper | 151.2 | 7.0 | 221.4 | 2,782 | 4.6 |
| Chuetsu Pulp & Paper | 110.6 | 1.5 | 156.5 | 1,916 | 1.4 |
| Kishu Paper | 50.9 | 0.7 | 63.4 | 1,470 | - |
| | | | | | - |
| Tokai Pulp Co | 54.1 | 0.9 | 72.4 | 1,134 | 1.7 |
| Tomoegawa Paper | 44.0 | 0.6 | 41.9 | 1,172 | 1.4 |
| Tokushu Paper | 22.1 | 1.4 | 53.5 | 543 | 6.3 |
| Mishima Paper | 36.1 | 0.9 | 39.2 | 861 | 2.5 |

Source: Pulp & Paper Statistics 2006 (Japan Paper Association), p. 18.

It is obvious that pulp and paper industries in Japan have developed rapidly, and there are three reasons for this. Firstly, the government provides a conducive condition for growth of these industries by incentive credit from banks, tax laws, and provides good infrastructure (ports and roads). Secondly, the sustainability for procuring raw materials (wood trade) from overseas as well as domestically by their huge tree plantations for raw materials. Thirdly, research and development respective to the pulp and paper industries is well managed. See

the following table for the top 12 Paper Companies' financial results for March 2005 (Table 3.5).

3.2. Raw materials (Wood Trade)

Japan's total wood demand was 105,382,000 m³ in 1987. Only 31% of this was produced domestically; the other 69% was imported (Table 3.6 and figure 3.1). Table 3.6 shows changes in the volume of Japanese wood imports (1960-1999). In 1960, Japanese wood demand reached 71,303,000 m³, but continued to increase until it exceeded 110,497,000 m³ in 1972. Because of an economic recession caused by the first oil shock of the 1970s, the demand for wood then decreased until the mid-1980s, before increasing again in the late 1980s. Since then self-sufficiency has fallen steadily, and by 1996 it had dropped to 21%. If Japan imports such a large amount of wood, what is her position in the global trade of forest products? Table 3.7 shows the five leading wood-importing countries for three different types of wood materials in 1998. Japan ranked first in importation of roundwood (log) and chip and particles, and was second to the United States in importation of sawn wood. Obviously, when the volumes for the three materials are totaled, Japan ranks first, outstripping the US.¹⁶

Table 3.6 Changes in Total Wood Demand in Japan 1960-2005

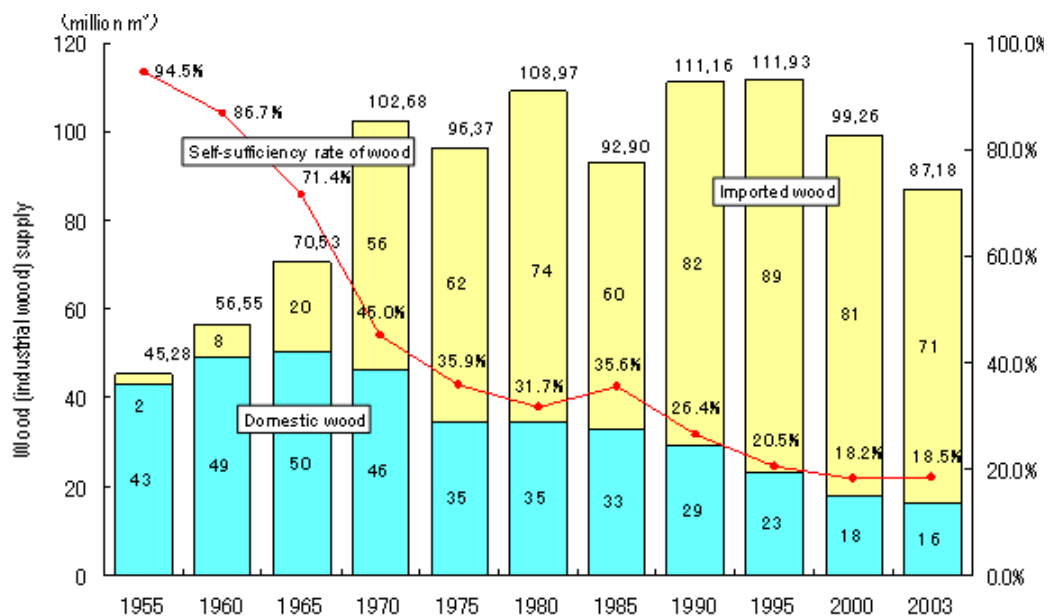
| (1,000 m ³) | | | |
|-------------------------|-------------------|--------------------|--------------------------|
| Year | Total Wood demand | Wood import Volume | Self-sustenance rate (%) |
| 1960 | 71,303 | 7,541 | 89 |
| 1966 | 82,470 | 25,041 | 70 |
| 1972 | 110,497 | 63,354 | 43 |
| 1978 | 106,344 | 71,363 | 33 |
| 1981 | 94,586 | 60,603 | 36 |
| 1984 | 93,963 | 58,772 | 37 |
| 1987 | 105,382 | 72,212 | 31 |
| 1997* | 109,905 | | |
| 1999 | 97,812 | | |
| 2000 | 99,263 | | |
| 2003 | 87,191 | | |
| 2004 | 89,799 | | |
| 2005** | 86,305 | | |

Note: Volume calculated in terms of roundwood volume.

Source: Forestry Agency (various years), *Ringyo tokei-yoran*; See Also Yoshiyai Iwai (2004), *Forestry and the Forest Industry in Japan*, p. 246; See also Forestry Agency (Ringyo-Cho) (from * to **).

¹⁶ For further information, see Yoshiya Iwai and Kiyoshi Yakutake, "Japan's Wood Trade," in Yoshiya Iwai, *Forestry and the Forest Industry in Japan*, Canada, UBC Press, 2002, pp. 245-246.

Figure 3.1. Trend of Supply/Demand and Self-Sufficiency Rate of Wood in Japan



Source: <http://rinya.maff.go.jp>; See Lumber Supply and Demand Chart.

Table 3.7 Changes in the volume of Japanese wood imports, 1960-1999

| Year | (1,000 m ³) | | | |
|------|-------------------------|-----------|--------|-------------------|
| | Roundwood | Sawn wood | Chips | Wood-based panels |
| 1960 | 6,223 | 156 | - | - |
| 1969 | 33,741 | 2,066 | 4,114 | 63 |
| 1975 | 35,650 | 2,612 | 11,340 | 165 |
| 1978 | 42,653 | 3,857 | 13,116 | 85 |
| 1981 | 29,220 | 3,898 | 12,508 | 191 |
| 1987 | 32,292 | 7,397 | 14,026 | 2,444 |
| 1990 | 28,999 | 9,082 | 19,043 | 4,066 |
| 1996 | 21,336 | 12,281 | 26,445 | 7,463 |
| 1999 | 16,551 | 9,740 | 25,295 | 6,034 |

Source: Forestry Agency (various years), *Ringyo tokei-yoran*; Food and Agriculture Organization (FAO), *FAO Yearbook, Forest Products*; Yoshiya Iwai and Kiyoshi Yukutake, *Loc Cit.*

Table 3.8 Leading Wood-Importing Countries, 1998 (volume, 1,000 m3)

| Rank | Roundwood | | Sawn wood | | Chips and Particles | |
|------|-------------|---------------|-----------|---------------|---------------------|---------------|
| | Country | Import (Vol.) | Country | Import (Vol.) | Country | Import (Vol.) |
| 1 | Japan | 15,190 | USA | 44,940 | Japan | 22,610 |
| 2 | Finland | 9,328 | Japan | 7,765 | Canada | 1,749 |
| 3 | Sweden | 9,300 | Italy | 7,295 | China | 1,699 |
| 4 | China | 7,150 | UK | 7,031 | Italy | 1,134 |
| 5 | Canada | 6,278 | Germany | 5,822 | S. Korea | 885 |
| | World Total | 89,329 | | 115,760 | | 37,883 |

Source: Food and Agriculture Organization (FAO) (1998), FAO Yearbook, Forest Products.

MAFF (*Ministry of Agriculture, Forestry and Fisheries*) divides timber demand into two broad categories: (1) industrial use or *youzai*; and (2) 'others.' The latter includes firewood and logs for the production of *Shiitake* mushrooms. The demand for these products will usually be satisfied in local markets and so although the level of demand is not small, it has no great significance for the international timber trade. The former category of *youzai* is further divided into *seizaiyouzai*, or sawn logs and finished and semi-finished solid wood products, pulp and chips, veneer logs and 'other uses.' Other uses include transmission poles, pit props, timber piling and scaffold poles. These figures for 1996 are shown in Table 3.9.

Table 3.9 The Demand for Timber in Japan and various timber uses

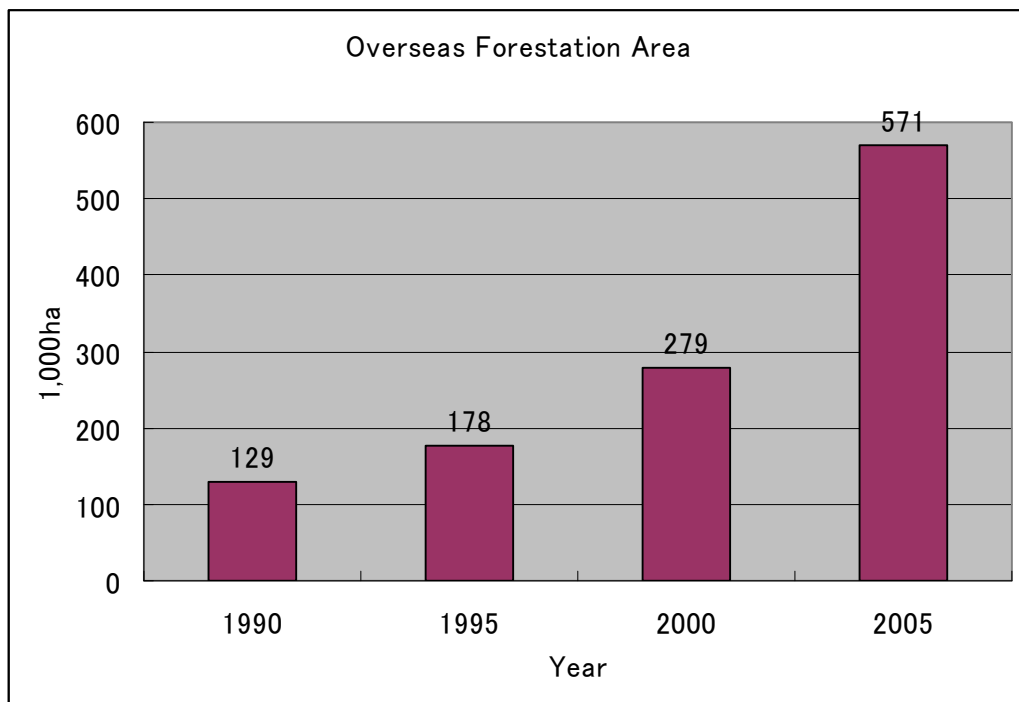
| Category | Demand (000 m3 RWE) | Domestic Production (%) |
|--|---------------------|-------------------------|
| Industrial Wood (Youzai) | 112,324 | 20.0 |
| Sawn logs and lumber (<i>seizaiyouzai</i>) | 49,758 | 32.5 |
| Veneer logs and plywood | 15,726 | 1.4 |
| Pulp logs and Chips | 43,822 | 12.9 |
| Other | 3,018 | 14.2 |
| Other uses | | |
| Firewood | 749 | |
| Shiitake bed logs | 967 | |
| Total | 114,040 | 21.2 |

Source: Forestry White Paper (1996); See Blandon, P.R., *Japan and World Timber Markets*, UK: CA International Press, 1999, p. 28.

3.3. Wood Chips

At present, the paper manufactured in Japan is made from 60% used paper and 40% wood pulp. In addition to using timber harvested from planted forests, wood pulp can be made from low-quality timber from natural forests and lumber residuals. In Japan, 71.1% (2005) of paper is recycled; this is one of the highest recovery rates in the world.¹⁷ Moreover, as used paper is recycled again and again, the fibers rub against each other and as a result their cohesive strength gradually deteriorates. For this reason, it is estimated that paper can only be recycled three to five times. In modern Japan the demand for paper has risen at the same pace as GDP; in particular it grew rapidly from the 1980s to the 1990s. In recent years, it had been assumed that increasingly widespread use of Information Technology (IT) equipment and the accompanying shift toward the paperless office would lead to a fall in demand for paper, and yet this has not happened: demand continues as ever at a high level, for example in 2004 the consumption of paper reached 31,383 million metric tons and in 2005 reached 31,380 million.

Figure 3.2 Overseas Afforestation Areas



Source: JOPP (Japan Overseas Plantation Center for Pulpwood), 2005, p. 9.

¹⁷ See *Overseas Plantations for a Sustainable Society of the Future: Forest Plantations and Pulp and Paper*, published by JOPP (Japan Overseas Plantation Center for Pulpwood), 2005, pp.4-9.

Apparently, to overcome these raw material constraints, Japan's papermaking companies are working to ensure the efficient use of timber resources through such steps as increasing the ratio of used paper in their products and using lumber scrap. At the same time, based on the principle of "create what you use," for sometime now they have been involved in *afforestation*¹⁸ projects principally aimed at securing a stable supply of high-quality wood chips as raw material. These plantation projects are not only being conducted in Japan, but also overseas. Based on a JOPP report, at the end of 2005, there were 33 forest plantation projects conducted overseas by Japanese companies connected with papermaking. These were located in nine different countries, mainly in the southern hemisphere—particularly Australia, Southeast Asia, South America, and South Africa. The total area of these plantations was 570,000 hectares (Figure 3.2).

The list of companies involved in these projects includes not only papermaking related firms but also trading companies (Itochu Corp, Mitsui, Marubeni, Sumitomo, Mitsubishi, and so on), electric power companies (Tohoku Electric Power, Osaka Gas, Tokyo Electric Power, Chubu Electric Power, Chugoku Electric Power, Shikoku Electric Power, and so on), publishers (Kodansha Ltd) and printers (Toppan printing), automobile manufacturers (Toyota Motor Corp, Honda), manufacturers of office automation equipment (Fuji Xerox), and mail-order retailers. An increasing number of companies that do not directly use timber as a raw material for paper are joining these projects, and this reflects the greater priority being given to the role of forests as absorbers of CO₂, and thus as a means to prevent global warming.

3.4. The Significance of the Pulp and Paper Industry

It is clearly shown that the pulp and paper industries are very significant in the modern history of Japan. As an architect of this industry, Shibusawa Eiichi advocated "Dototku Keizai Goitsu Setsu" the theory of the Harmony of Morality and Economy, all his life. It is said that the number of business enterprises in which Eiichi was involved in founding and fostering exceeds 500. Currently, Japan has the world's third largest paper and paper board production, about 30.8 million tons in 2004, and per capita consumption has reached 247 kg.

The production systems of Japan's dominant paper manufacturers are integrated from pulp through to paper and paperboard production.¹⁹ In 1995 the producing companies' integrated mills consumed 86% of total pulp production. Some paperboard manufacturers who use wastepaper, however, produce very little pulp at their mills. No Japanese firm

¹⁸ Afforestation means conducting reforestation programs (planting trees such as Eucalyptus globulus, Acacia mangium, Pinus radiata, etc.) for wood chips as raw materials in previously forested areas which have currently become critical land or covered by bushes.

¹⁹ Grades and classifications of paper and paperboard are newsprint, printing, and communication (copy paper, thermal paper, forms, etc.).

specialized in pulp production only. Two underlying factors are mentioned for this. Firstly, Japanese companies are reluctant to carry it out, because of the lack of land for planting trees as raw materials. Secondly, the advantages of this business are on a decreasing trend in recent times. This is due to a shortage of categories of product which eventually affects the firm's lack of income generation.

The paper manufacturers' financial condition has greatly deteriorated in recent years due to a downturn in the economic cycle caused by recession after the collapse of the "bubble economy" (in the decades of the 1990s to the early 2000s). Apparently, some paper manufacturers are once again trying to strengthen their management through merger and acquisition. Japanese paper manufacturers began reorganizing through two successive large-scale mergers in 1993 and 1997. For instance, the merger between Oji Paper and Kanzaki Paper to form New Oji (1993), Oji Paper with Nippon Pulp industries (1979) and also between Oji Paper and Honshu Paper (1997) to become Oji Paper. In 1995 New Oji Paper produced 3.6 million tons of paper and paperboard (12.0% production share) and Nippon Paper 3.0 million tons (10.1% share). This was rapidly increased and Oji Paper's production reached 6.0 million tons in 1997 (19.4% production share) and sales were about ¥980 billion. Currently, Oji Paper is the largest company in the Japanese pulp and paper industry in Japan.²⁰ The world paper market is continuing to grow, both in terms of production and consumption, and the pulp and paper industry is said to be a growth industry. Currently, the center of production and consumption is shifting from North America and

Table 3.10 Results of Major Global Pulp and Paper Companies in 2003

(in trillion Yen)

| Company | Sales of P&P business | Consolidated Sales | Operating Profit |
|-----------------------------------|-----------------------|--------------------|-------------------|
| 1. International Paper (USA) | 2.5 | 2.9 | 129 (billion yen) |
| 2. Stora Enso (Finland) | 1.3 | 1.6 | 63.4 |
| 3. George Pacific (USA) | 1.3 | 2.3 | 135.5 |
| 4. Svenska Cellulosa (Sweden) | 1.2 | 1.2 | 111.6 |
| 5. UPM-Kymmene (Finland) | 1.1 | 1.3 | 102.7 |
| 6. Kimberly-Clark (USA) | 1.1 | 1.7 | 279.8 |
| 7. Oji Paper (Japan) | 1.0 | 1.2 | 73.9 |
| 8. Nippon Paper (Japan) | 1.0 | 1.2 | 55.7 |
| 9. Weyerhaeuser (USA) | 0.8 | - | - |
| 10. Smurfit-Stone Container (USA) | 0.7 | - | - |

Source: Nippon Paper Group (http://www.np-g.com/e/about_vision/index.html).

²⁰ See Hideshi Noda, "The Japanese Pulp and Paper Industry and Its Wood Use," in Yoshiya Iwai (ed.), *Forestry and the Forest Industry in Japan*, Canada: UBC Press, 2002, pp. 225-226.

Western Europe to Asia. The Pulp and Paper Groups, which have their base in Japan (such as Oji and Nippon Paper) are favorably positioned in close proximity to the Asian market, which will see significant growth. Therefore, the Nippon Paper Group and the Oji Paper's vision for 2015, intending to become two of the top five pulp and paper companies in the world, seems realistic despite the fact that they were currently positioned number seven and eight among the top 10 major global pulp and paper companies in 2003 (Table 3.10).

3.5. *A Brief History of Paper*

The invention of paper in China dates from ancient times; paper from the early Qianhan Dynasty has been found in mounds in Gansu Province in China (176-141 BC) and Baqiao paper predating the Qianhan Dynasty has been discovered. Today, the familiar name of Ts'ai Lung is generally remembered as a great figure who improved the method of papermaking. In fact, Ts'ai Lung worked for Emperor Chang (A.D.77) and was granted a high position and honors, the emperor appointing him Chief of the Imperial Supply Department. He was entrusted with the important function of making swords, implements and furniture for the imperial household. It was during this period of success that he found a way of increasing the production of paper.²¹ This invention was extremely significant in retrospect for the writing and writing materials of ancient China. A country in which learning was revered, China early developed, possibly in the twelfth century before Christ, an ideographic system of notation based on figures used in divination. Paper invention in China had a great impact on cultures and civilizations throughout the world. The Japanese transformed it into Washi²² and the Europeans into Western-style paper.

There are different versions of historical events regarding paper transmitted into Japan. According to one source, it was transmitted into Japan in the late second or third century. But, according to Kojiki, Japan's oldest extant chronicle (712), Wani Kishi (Wani) of Paekche arrived in Japan in the 16th year of the reign of the Emperor Ojin (285) carrying 10 scrolls of the Analects of Confucius and one of the "Thousand Character Classic." The Kojiki also says that the Japanese began making paper in the 18th year of the reign of Empress Suiko (610) during the Asuka period. The role of paper eventually had a very significant effect in Japan. The main production areas were: Shuzenji, Mino, Kamakura, Sugihara (Banshu), Nara, Yoshino, Koya, Minato (Senshu), Nishijima (Kai), Nishinouchi (Hitachi), and Mizoguchi (Chikugo). The products had an exhaustive list of uses: Kamiya-gami (shuku-shi, rinshi-gami, usuzumi-gami), shiki-shi, Kara-kami (bamboo paper

²¹ Kiyofusa Narita, *A Life of Ts'ai Lung and Japanese Paper Making*, Tokyo: Paper Museum Publisher, 1954: pp. 2-3.

²² Washi is an original Japanese paper. It made from kozo (mostly), mitsumata and ganpi tree. Currently only 400 households make Washi in Japan, but in the Meiji era (1868-1912) this reached 70,000 households. This interview was held with Mr. Fujiwara, staff of the Paper Museum, Oji, Kita-ku, Tokyo on October 8, 2006. See also the document exhibition in this Paper Museum.

for sliding doors and folding screens), hana-gami, shoji-gami, seicho (used for documents), yakutai-shi (paper for medicine pouches) and ro-gami (wax paper). Over the past 300 years, both the quality and variety of Japanese paper has increased, along with its utility and beauty, and it has become a fully commercial product.²³

During the Yedo period (1603-1867), all daimyos or feudal lords encouraged papermaking in their own provinces. Each daimyo had a specially designated paper factory for his own use, and granted the monopoly of sales of paper to a paper-dealer in his province. In those days, rice, paper and lacquer constituted the chief articles of tributes to the daimyos.²⁴ Among the representative species of paper of this period, clay-containing *torinoko* or Settsu, *nishi-no-uchi* and *hodo-mura* of Hitachi and Shemozuke, and *hosho* of Echizen can be cited. Of these however, the most popular paper for daily use was what has been called *hanshi*, manufactured in nearly every province, as shown in documents belonging to this period. The most well-known *hanshi* were *Yanagagawa hanshi* of the province of Chikugo, *Yamashiro hanshi* of Nagato, *Tokuji hanshi* of Suo, *Sekishu hanshi* of Iwami and *Ozu hanshi* of Iyo.

From the Meiji Era to the Second World War

The role of the Meiji Emperor in launching modern Japan was very significant. The Japanese government sent missions to Europe and America to learn advanced Western technologies. Mission members clearly realized that paper manufacturing and the printing industry were necessary to modernize Japan. Meanwhile, there was some talk about the possibility of starting a papermaking business. At that time, Shibusawa was a high official at the Ministry of Finance. He advised the development of the paper- manufacturing business. His views in regard to this matter were summarized as follows:

“..... . The high development evident in the West is largely due to the high level of culture among the people. Many factors may contribute to the spread of culture, but the foremost is undoubtedly printing. By means of printing, a great number of books, newspaper, and periodicals can be made available; and the material for these publications would be necessarily be paper. It is obvious then that papermaking and printing are, so to speak, the fountainhead of civilization.”²⁵

In those days there were three large business companies in Japan: the Mitsui, the Ono and the Shimada, which ran the financial organization of the Meiji government. Shibusawa persuaded these companies to render real service to the country by establishing a papermaking industry. Eventually the efforts of Shibusawa were fruitful in organizing paper manufacture with a little capital as possible, about Y150,000. In November 1872, these three

²³ The History of Oji Paper, *Loc Cit*, pp. 162-163..

²⁴ Kiyofusa Narita, *Loc Cit*, p. 27.

²⁵ *Ibid*, pp. 94-95.

companies agreed to apply for a permit to start a company under the name “Paper Company.” In the sixth year of Meiji (1873) the demand for machine-made paper was limited to governmental use, and at about this time the Ministry of Finance began to issue paper money and public bonds. However, the demand for printing paper gradually increased as newspapers, books, and magazines were being printed by the Western method.

Paper company-related industry, Oji Paper and Nippon Paper Company were founded at this time. The existence of paper industries led to newspaper publication, which boomed, and many translated books were published at the end of the 1870s. Because much Western-style paper consumed in Japan at this time was imported, and the demand for such paper was increasing, Japanese paper companies began producing it domestically.²⁶ In 1877, domestic production of Western-style paper was 547 tons, compared with imports of 771 tons. In 1875, the Oji Mill, which introduced the Western method of paper manufacturing, began operations. In 1933, big pulp and paper manufacturers such as Oji Paper merged with Fuji Paper and Karafuto, and constructed new mills on the northern island of Hokkaido, where they started the mass production of paper, particularly newsprint. This company virtually monopolized the Japanese market, producing 80% of the paper and 95% of the pulp. Under this phenomenon, paper imports peaked at 90,000 tons in 1936; Japanese paper production reached its prewar peak of 1,540,000 tons in 1940. Apparently, raw materials in the northern territory were abundantly available in the form of yezo spruce (*Picea jezoensis*) and todo fir (Sakhalin fir, *Abies sachalinensis*). The manufacturers also built mills in Sakhalin, where more of the same pulpwood could be obtained, enabling mass production of paper during the 1910s. From this point, domestic self-sufficiency in Western-style paper was established.

Unfortunately, Japan’s defeat in World War Two (1945) eventually had a negative effect on the development of the Japanese pulp and paper industry. First, because Japan had lost overseas territories like Sakhalin, the industry lost abundant *fibres* resources and much factory equipment. The consequences for paper production were that production decreased to 210,000 tons in 1946. Second, in 1949 Oji paper was divided into several companies by the US government of occupation. Many smaller pulp and paper manufacturers emerged and competition resumed. The prewar monopolistic pulp and paper market was transformed virtually overnight into a competitive industry.²⁷

In contrast, demand for paper expanded greatly in the rapidly growing postwar Japanese economy. Paper began to be used for various products. Cardboard boxes, for instance, replaced wooden boxes and were widely used as containers for transporting and protecting goods. Thus, paperboard demand also increased rapidly. Nationwide, pulp and paper manufacturers expanded production, investing in facilities and equipment and promoting

²⁶ Hideshi Noda, *Loc Cit*, p. 215.

²⁷ *Ibid*, p. 216.

technological innovation.

3.6. *Impact on Environmental Conditions*

The rapid development of the industrial sector, especially the pulp and paper industries, had impacts on environmental pollution. There has been considerable debate about development and environment. Human activities including industrialization and development in advanced countries such as Japan in recent years has caused local pollution problems to be compounded by environmental destruction on a global scale.²⁸ This has led people to realize that economic development aimed at making life more affluent can, if not properly managed, ultimately jeopardize humanity's survival. Thus, it is clearly necessary to think about the concept of development from an environmental perspective. But we must also recognize that human existence inevitably has some effect on the environment. The best we can realize is to minimize the negative impacts our actions have on environmental conditions now and in the future.

During the 1950s and 1960s Japan obtained the reputation of being a showcase of environmental pollution. Some reports of victims of mercury and cadmium poisoning were published all over the world. Smaller cities, such as Minamata (Kumamoto Prefecture), Yokkaichi (Mie Prefecture), Fuji City (Shizuoka Prefecture), Tokyo Bay, Niigata, etc, became domestically and internationally famous for their pollution-related diseases. Probably no other country had come to feel the consequences of unrestrained industrial growth as early and as painfully as Japan.²⁹ What subsequently occurred was that, beginning with the latter part of the 1960s, government and private companies reformed their ecologically ignorant attitudes. This critical condition on pollution stimulated more Japanese who were affected by pollution to start to protest loudly, and these were supported by NGO activities against industrial and governmental activities that harmed the environment and impaired human health. They were supported by environmentalist activists such as researchers, journalist, judges and NGOs. The roles of these groups were very significant in encouraging changes by imposing revolutionary sentences on polluting enterprises. This effort was fruitful for people's consciousness concerning sensitivity to environmental problems, and spread among the public. All this eventually led to a fundamental about-face in Japan's environmental policy. The government now supports the implementation of a strict environmental regulation regime towards the industries and enforces it, and this has been rewarded with quite spectacular success in individual

²⁸ Shigeaki Fujisaki, "Rethinking Economic Growth and Its Implication for Resources and the Environment," in Reetsu Kojima *et al.* 1995. *Development and the Environment: The Experiences of Japan and Industrializing Asia*, Tokyo: Institute of Developing Economies, p. 1.

²⁹ Helmut Weidner, "Preface," in Shigeto Tsuru & Helmut Weidner (eds.), 1989. *Environmental Policy in Japan*, Berlin: Sigma Bohn, p. 9.

environmental areas. Therefore, other countries now look to Japan in the hope of finding solutions to their own environmental problems. Japan did not only shed her image as “pollution nation”, in some respects she now stands out as a paragon of effective anti-pollution policy.

This paper discusses the role of two of the largest pulp and paper industries in Japan in terms of their development, raw materials, production, distribution, revenues, research and development. In contrast, the consequences of pulp and paper industrialization, when ecologically ignorant attitudes prevail, have a serious effect on environmental pollution. From this perspective, it is useful to investigate the role of NGOs and environmentalist activists in criticizing pollution, how they support affected communities and how they attempt to recover environmental damage.

CHAPTER IV

PROFILES OF TWO PULP AND PAPER COMPANIES

Introduction

The role of the private sector as a direct actor in encouraging the pulp and paper industries is very significant. The development of pulp and paper properly registered great progress for almost a hundred years following the Meiji Restoration. There are many fascinating players in this sector such as Oji Paper, Nippon, Daio, Rengo, Mitsubishi, Hokuetsu, Chuetsu, Kishu, Tokai, Tomoegaea, Tokushu, Mishima, and so on. These 12 actors are categorized as the largest paper companies in Japan from the viewpoint of sales, profit, total asset and employees. This paper focuses on the two biggest actors, namely Oji Paper and Nippon Paper, which are placed at rank number seven and eight among ten (10) as the major global pulp and paper companies.

4.1. The Oji Company

Oji Paper Group is the largest business concerning pulp and paper in Japan with annual sales of Y1,185 trillion (March 2005). The group's core company Oji Paper, is a publicly listed company on the Tokyo Stock Exchange, obtained profits after tax of about Y43.3 billion and had more than 18,600 employees in 2005.³⁰ For more than 132 years (1873-2006), Oji Paper has contributed to cultural progress and the improvement of people's lives as the leading company in Japan's paper industry. This company produced about 8.9 million tons of paper and paperboards in 2003 (*Japan Pulp and Paper, 2005*).

4.1.1 History of the Oji Company's Development

Oji Paper Company, which is familiarly known as "Soshi Kaisha" was founded on the 12th of February in 1873 in the village of Oji in Tokyo Prefecture by Eiichi Sibusawa. Obviously, Sibusawa intended to promote the modernization of Japan through paper manufacturing. The company, capitalized at Y150,000, was the first joint-stock company in Japan.³¹ The beginning of the construction of mills in 1874, under Kojima-Gumi, was supervised by western engineers Frank Cheethmen from Britain, and Bottomley and Walsh

³⁰ The second largest is Nippon Paper Group Y1,179.7 billion, followed by Daio Paper Corporation Y395.4 billion, Rengo Y391.2 billion and Mitsubishi Paper Mills Y234.7 billion. See "Top 12 Companies Financial Results on Pulp and Paper Industries" in Japan for March 2005; *Pulp & Paper Statistics 2006*: Japan Paper Association, 2006, p. 18.

³¹ For further information see *The History of Oji Paper*; Tokyo: Bunkado Printing, 2004, p. 163.

from the United States.³² It was quite a new experience for Kojima-Gumi Company to construct an entirely Western style-building. The construction of the mill was completed by June 1875, and when it was equipped, paper-making was started. Imported from England were a Fourdrinier paper machine, seventy-eight inches wide, and the largest of those installed in the six mills established in this country between 1872 and 1879,

In 1875, the Oji Mill, which introduced the Western method of paper manufacturing, began operations. In 1889 Keta Mill, Japan's first wood pulp mill, began operation on the bank of the Keta River, in Shizuoka Prefecture. In the first stage of Western paper manufacturing, the company positively developed new technology and new products in addition to introduction of the newest facilities. So we can see the company had already sought to create its corporate culture, characterized by a positive attitude toward better technology, which has been handed down to the present Oji Paper. As it developed later (1893), the company changed its name to 'Oji Paper Co. Ltd.' It constructed a large mill in 1910 with the newest facilities at the village of Tomakomai in Hokkaido in order to meet the increasing demand for paper for newspaper, books and magazines. Therefore, in order to look for raw material resources, the company directed its attention to a vast field, located on the Chitose River originating in Lake Shikotsu.

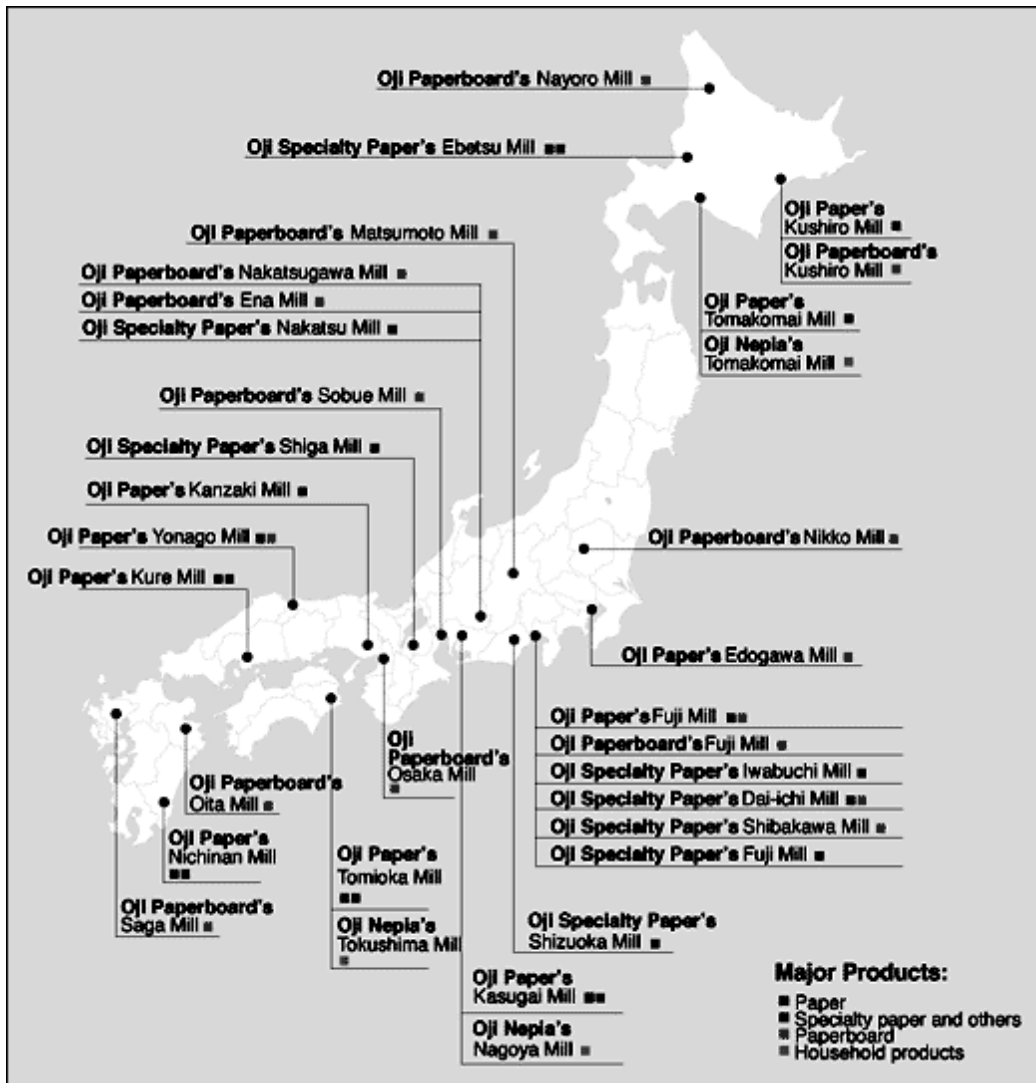
This rapid development of Oji Paper took place after Ginjiro Fujiwara was appointed president in 1911. He had good leadership skills and rehabilitated many sectors of the company. He devoted himself to expanding the paper manufacturing business into Manchuria and the Korean Peninsula until he retired from the presidency in 1940. It was remarkable that Fujiwara developed the paper pulp business in Sakhalin and merged the company with Fuji Paper and Kurafuto Kogyo in 1933, making the biggest paper company in Japan. In this case, Fujiwara has been considered as the father of the Oji restoration. As known, the key to success in management of the company was that Fujiwara embraced the revered Eiichi Shibusawa's teachings: "paper manufacturing industry should perform its duty for society." Shibusawa set forth his principles of business management that emphasized the need to combine good business practice with good ethics. So Fujiwara consistently managed the company considering the prospects for the future and education to cultivate the abilities of staff members.

Following Japan's defeat in World War II, the Excess Economic Powers Decentralization Act was implemented, effectively dividing the company into three components: Tomakomai Paper, Jujo Paper, and Honshu Paper. The newly founded Tomakomai Paper Co., Ltd. strove to reconstruct the Tomakomai Mill through improvement and perfection of equipment. As a result, in 1951 the company could produce 498 tons a day, which surpassed the highest prewar production record of 475 tons. One thing to which was paid very strategic attention by Oji Company was the significant institute of a research

³² Kiyofusa Narita, *Loc Cit*, pp. 102-104.

laboratory. To parallel this, meanwhile, the Central Research Laboratory was founded at Shinonome district in Tokyo (in 1957) in order to promote the improvement of the quality of products and to develop new products. Further, the Institute for Forest Tree Improvement was established at Kuriyama in Hokkaido (in 1956) and also the Kameyama Forest Tree Improvement Institute opened in Mie Prefecture (in 1957). They began to carry out research on how to improve the breeding of trees for the purpose of propagating tree planting.

Figure 4.1 Holdings and Branches of Oji Company

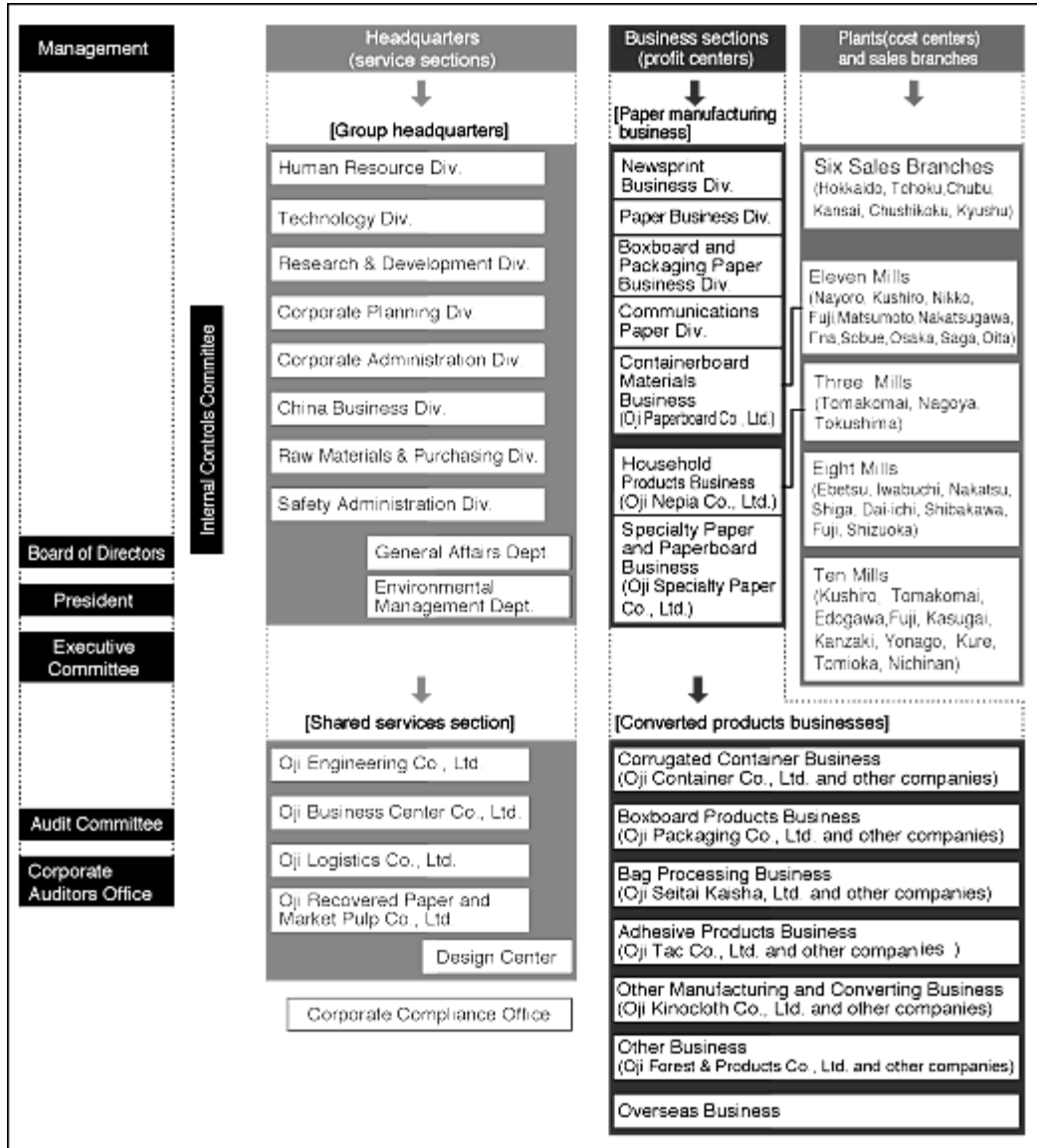


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Source: See *Oji Paper Group*, ojipaper.co.jp/English.

Figure 4.2 Oji's Management Structure

Group Management Structure



Source: See Oji Paper.co.jp/English (Group Structure).

As a result, under this strategic development, Oji Paper was rapidly setting up the production of paper, proceeding to carry out the plan for the modernization of mills and

technical innovations along with the promotion of setting up larger plants. Eventually, the company merged with Kita Nippon paper (1970), Nippon Pulp Industries (1979), and Toyo Pulp (1989). In 1993, Oji Paper merged with Kanzaki Paper to become Oji Paper, and furthermore, in 1996, New Oji Paper and Honshu Paper merged to become Oji Paper (Figure 4.1). Currently, Oji is one of the largest and most influential paper manufacturers in Japan as well in the world.³³ Obviously, the management diagram is based on a group structure (Figure 4.2)

4.1.2. Wood Raw Material Policy

Oji Company’s policy is to make efforts to procure raw material through sustainable forest management. There are some procurement guidelines: (1) expand procurement of wood from certified forests; (2) increase use of plantation trees; (3) utilize unused wood effectively; and (4) ensure raw material traceability. Oji paper will work to trace the origin of wood raw material and confirm that it was from well-managed forests (Figure 4.3 & 4.4). Oji Paper will be particularly vigilant about not purchasing from illegal logging.

The objective of sustainable forest management is to achieve environmentally, and socio-economically sound forest management. The criteria of environmental sustainability is to preserve biodiversity and ecological processes. Meanwhile, social sustainability means to sustain human society, which relies on forests. Economic sustainability means to sustain the viability of forest-related companies and communities. Therefore, objective criteria and indicators have been established for evaluating sustainable forest management for Japan and its regions with similar natural conditions and social backgrounds. On the other hand, forest certification entails a defined process of evaluation and certification by in-depth third-party organizations that a forest is well managed according to sustainable forest management criteria. Internationally recognized forest certification schemes include the Forest Stewardship Council (FSC), the Sustainable Forestry Initiative (SFI). The Sustainable Green Ecosystem Council (SGEC) is the locally recognized forest certification scheme in Japan (Figure 4.5)

Figure 4.3. Composition of Wood Chip Procurement

| FY | Material | | | | | |
|--------|-------------------|-----|-------------------|-----|-------------------|-----|
| FY2004 | Imported hardwood | 58% | Imported Softwood | 15% | Domestic Softwood | 24% |
| FY2011 | Imported hardwood | 66% | Imported Softwood | 12% | Domestic Softwood | 19% |

Source: Oji Paper.co.jp. *Ibid.*

³³ For further information, see: <http://www.ojipaper.co.jp/English/group/corporate/history.html>.

Note: The Fiscal Year (FY) 2011 plan includes wood raw material procured for a new plant.

Figure 4.4 Plan for Increase in Plantation Trees and Certified Wood for Import

| | | | | |
|-------|-----------------------------|-------------------------|-----------------------|---------------------------------|
| FY04 | Oji Paper Plantation 8% | Plantation trees 72% | Sawmill residue 9% | Low-grade, natural trees 13% |
| FY011 | Oji Paper Plantation 16% | Plantation trees 81% | Sawmill residue 6% | Low Grade, natural trees 13% |

Source: Oji Paper co.jp. *Ibid*

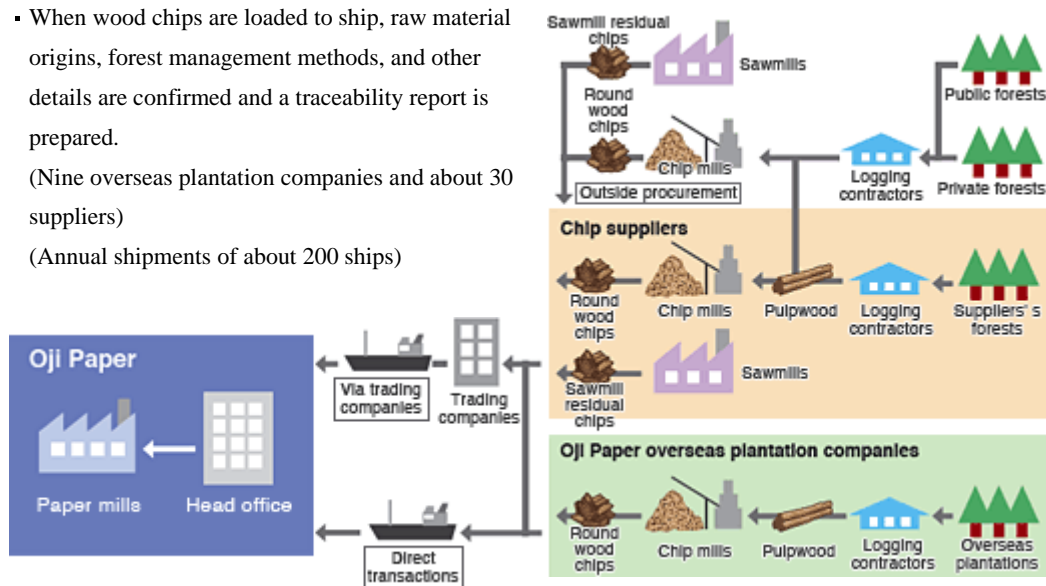
Figure 4.5 Plan for Expansion of Oji’s Paper Overseas Plantation (ha)

| Fiscal Year | Plantation |
|------------------|------------|
| Fiscal Year 2004 | 140,000 |
| Fiscal Year 2011 | 300,000 |

Source: *Ibid.*

Figure 4.6 The Process of Raw Materials and Shipping to the Head Office

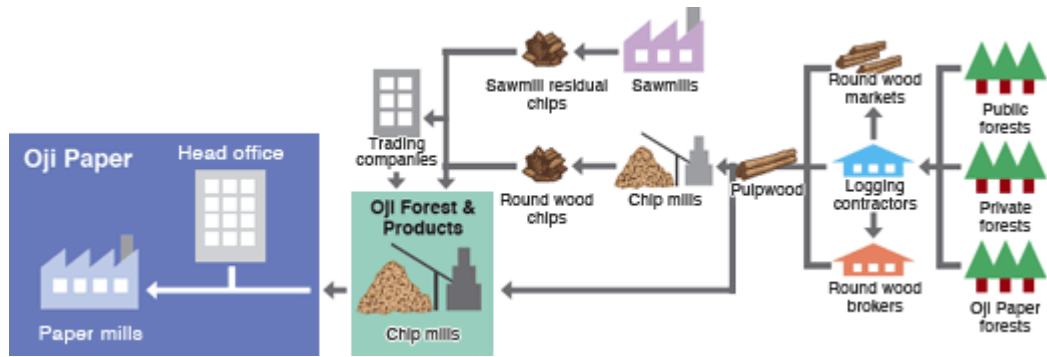
- When wood chips are loaded to ship, raw material origins, forest management methods, and other details are confirmed and a traceability report is prepared.
(Nine overseas plantation companies and about 30 suppliers)
(Annual shipments of about 200 ships)



Domestic wood chips

- Procurement of domestic wood chips is handled by Oji Forest & Products.
- Oji Forest & Products has representatives in major cities across Japan to meet with suppliers.
- Raw material origins, forest management methods, and other details are confirmed and traceability reports are prepared on a regular basis.

(About 700 suppliers)



Source: Oji Paper.co.jp/English.

Figure 4.7 Tree Plantations, Mills and Factories Overseas

Overseas Activities

[Pulp & Paper Products](#) / [Communications Papers](#) / [Converted Products](#) / [Household Products](#) / [Afforestation](#)

Location of Overseas Mills and Plantations



Oji paper's effort to procure raw materials is to plant industrial timber plantation in many countries. For example, in China, Thailand, Vietnam, Laos, New Zealand, Australia (Tasmania, Adelaide, Brisbane, Victoria, Albany, etc.) and Canada.³⁴ The representatives in some countries inspect shipments of wood chips, advise on quality, and meet with suppliers. The ship cargo is prepared by Oji Company (Figure 4.7) These annual shipments are about

³⁴ See Pulp & Paper Statistics 2006, *Loc Cit*, p. 24.

200 ships. In contrast, Oji Forests & Products has representatives in major cities across Japan to meet with suppliers.

4.1.3. Research and Development (R & D)

The progress of a company depends on utilizing Research and Development (R&D) as a strategic function to step ahead into the future. In the case of Oji, as the largest paper company in Japan, because of an optimal utilizing of R&D for driving progress forward for the company, this makes an important contribution to society through R&D activities targeted toward the discovery of new possibilities in paper products and the forests and trees from which it is made. Undoubtedly, new technologies, products and services are the driving force for continuing growth and success. On the other hand, Oji Company focuses on acceleration of the creation of new advances by increasing its research and development through: (1) Pulp and Paper Research Laboratory, which is in charge of strengthening core business and supporting the technical development of new products; (2) Imaging Media Development Laboratory; with the rapid advance of the information age, this company is developing products to meet customers' needs for paper in the role of information communication media; (3) Fundamental Technology Research Laboratory; conducting research in peripheral fields of paper, development of new materials, new manufacturing methods and systems, and biotechnology applications; (4) Forestry Research Institute; in view of environmental technology on a world scale, the institute is developing the efficiency of afforestation abroad and developing new species which are suitable for afforestation areas and paper manufacturing material; (5) Material Analysis Center; high analysis and evaluation technology are indispensable to maintaining and improving high quality products and the development of new products; and (6) Intellectual Property Department and R&D Management Development; This is supporting the promotion of protecting rights, such as to new technology, and maintenance of the company's rights.

4.1.4. Corporate Code of Conduct

As mentioned above, a key success of Oji is an optimal utilizing of R & D which is intensively implemented. Besides, Oji also strongly holds to its "Corporate Code of Conduct." This code of conduct acts as guiding principles for corporate activities based on awareness of the company's responsibilities as a corporate citizen and on high ethical principles appropriate for an organization that enjoys the support of society. The implementation of the code of conduct is a significant step for Oji Company, such as compliance with the law; harmony with the environment; supply for sale of useful products and services; communication with society; co-existence with the international community; contribution through manufacturing; and achievement of employee satisfaction.

4.2. Nippon Paper Group

This company is the second largest after the Oji Company concerning the paper business group in Japan, with Y1.179 trillion in annual group sales in 2005. The group's core business is divided among four divisions, namely, (1) Pulp and Paper Division; (2) Paper-Related Division; (3) Housing and Construction Materials Division; (4) and Other Division (Figure 4.8). The Nippon Company is a publicly listed company on the Tokyo Stock Exchange with total assets of Y1.530 trillion and profit after tax of Y24.4 billion, the number of employees being 13,774.³⁵

Figure 4.8 Related Companies

© Pulp and Paper Division

Nippon Paper Industries Co., Ltd.

Kitakami Paper Co., Ltd.

KOYO PAPER MFG. CO., LTD.

Daishowa North America Corporation

Nippon Paper Industries USA Co., Ltd.

Nippon Daishowa Paperboard Co., Ltd.

Nippon Daishowa Paperboard Tohoku Co., Ltd.

Nippon Daishowa Paperboard Kanto Co., Ltd.

Nippon Daishowa Paperboard Yoshinaga Co., Ltd.

Nippon Daishowa Paperboard Nishinippon Co., Ltd.

Nippon Paper Crecia Co., Ltd.

NP Trading Co., Ltd.

HAGA Paper Trading CO., LTD.

Kokuei Paper Co., Ltd.

© Paper-Related Division

NIPPON PAPER-PAK CO., LTD.

Nippon Seitai Corporation

Nippon Paper Chemicals Co., Ltd.

FLOWRIC CO., LTD.

Nippon Tokan Package Co., Ltd.

Sakurai Co., Ltd.

© Housing and Construction Materials Division

³⁵ See Pulp & Paper Statistics 2006, p. 18.

Nippon Paper Lumber Co., Ltd.
South East Fibre Exports Pty. Ltd.
NIPPON PAPER UNITEC CO., LTD.
Daishowa Unitec Co., Ltd.
Kokusaku Kiko Co., Ltd.
PAL CO., LTD.
N & E CO., LTD.
Daishowa Uniboard Co., Ltd.
Kunimoku House Co., Ltd.

© Other Division

NIPPON PAPER DEVELOPMENT CO., LTD.
SHIKOKU COCA•COLA BOTTLING CO., LTD.
NIPPON PAPER LOGISTICS CO., LTD.
IWAKUNI-KAIUN CO., LTD.
Kyokushin Transport Co., Ltd.
NANKO UNYU CO., LTD.
Hotoku Co., Ltd.
Daishowa Logistics Co., Ltd.
Asahikawa Grand Hotel Co., Ltd.
Graphic Arts Communication

4.2.1. History of the Nippon Paper Company's Development

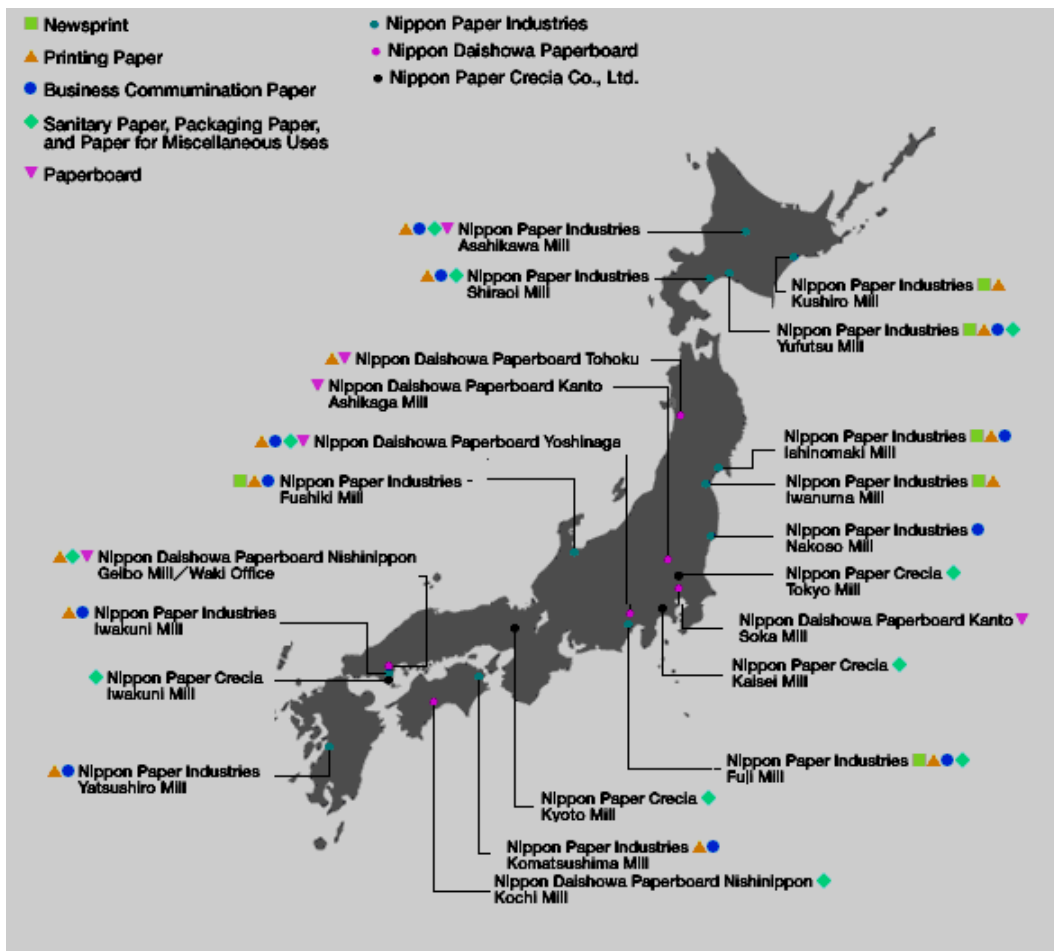
The initial stage of Nippon Paper began with a merger among pulp and paper groups. For instance between Fuji Seisho, which built Kushiro Mill in 1920, and Kyushu Seisho, whose Yatsuhiko Mill started operation in 1924. They agreed to merger in 1933 and built Hokkai Kogyo. On the other hand, this company also built Sanyo Pulp Kogyo in 1937, established Iwakuni Mill in 1939, followed by Kokusaku Pulp Kogyo in 1938, and then established Asahikawa Mill in 1940. It agreed to a merger in 1945 between Asahikawa Mill and Yufutsu Mill under Dai Nippon Saisei-Seishi.

Through the merger of these companies, the Nippon Paper Industry was established as a paper manufacturer on August 1, 1949, with capital of 104,873 million yen. Under the leadership of Masatomo Nakamura the company rapidly developed many branches of the industry and established the promotion of a structure and launched a philosophy (Figure 4.9). The Nippon Company emphasizes its philosophy “as a member of society, we shall proudly promote activities that contribute toward social development.” This consists of three principles, namely, (1) contribution to cultural heritage and development; (2) contribution to

conservation and improvement of the environment; (3) and contribution to the development of communities.³⁶ It is obvious in all of its operations that the Nippon Company being consistently committed to working in harmony with the environment, sustainable business development, fairness, risk management as a member of society will be of critical importance to their success.

A radical step was taken again on March 30, 2001, when the Nippon Paper Group was formed as Nippon Unipac Holding, which was a pure holding company of Nippon Paper Industries Co., Ltd and Daishowa Paper Manufacturing Co., Ltd., to facilitate the companies' integration of their operations. The Nippon Unipac Holding changed its name to Nippon

Figure 4.9 About Nippon Paper Group > The List of Main Domestic Mills



³⁶ See “Philosophy & Social Contribution Subcommittee,” at http://www.np-g.com/e/csr/ideology/social_commission.html.

Paper Group, Inc., on October 1, 2001. On April 1, 2003, the Nippon Paper Group introduced a new organizational structure under which the paper business and paperboard business “the Group’s two core operations” were consolidated and reorganized under the Nippon Paper Industries Co., Ltd and the Nippon Daishowa Paperboard Co., Ltd, respectively. Currently, The Nippon Paper Group, consists of Nippon Paper Group, Inc., Nippon Paper Industries Co., Ltd, Nippon Daishowa Paperboard Co., Ltd and their 145 subsidiary companies and 49 affiliated companies, actively involved in manufacture and sales of pulp and paper (Figure 4.10).

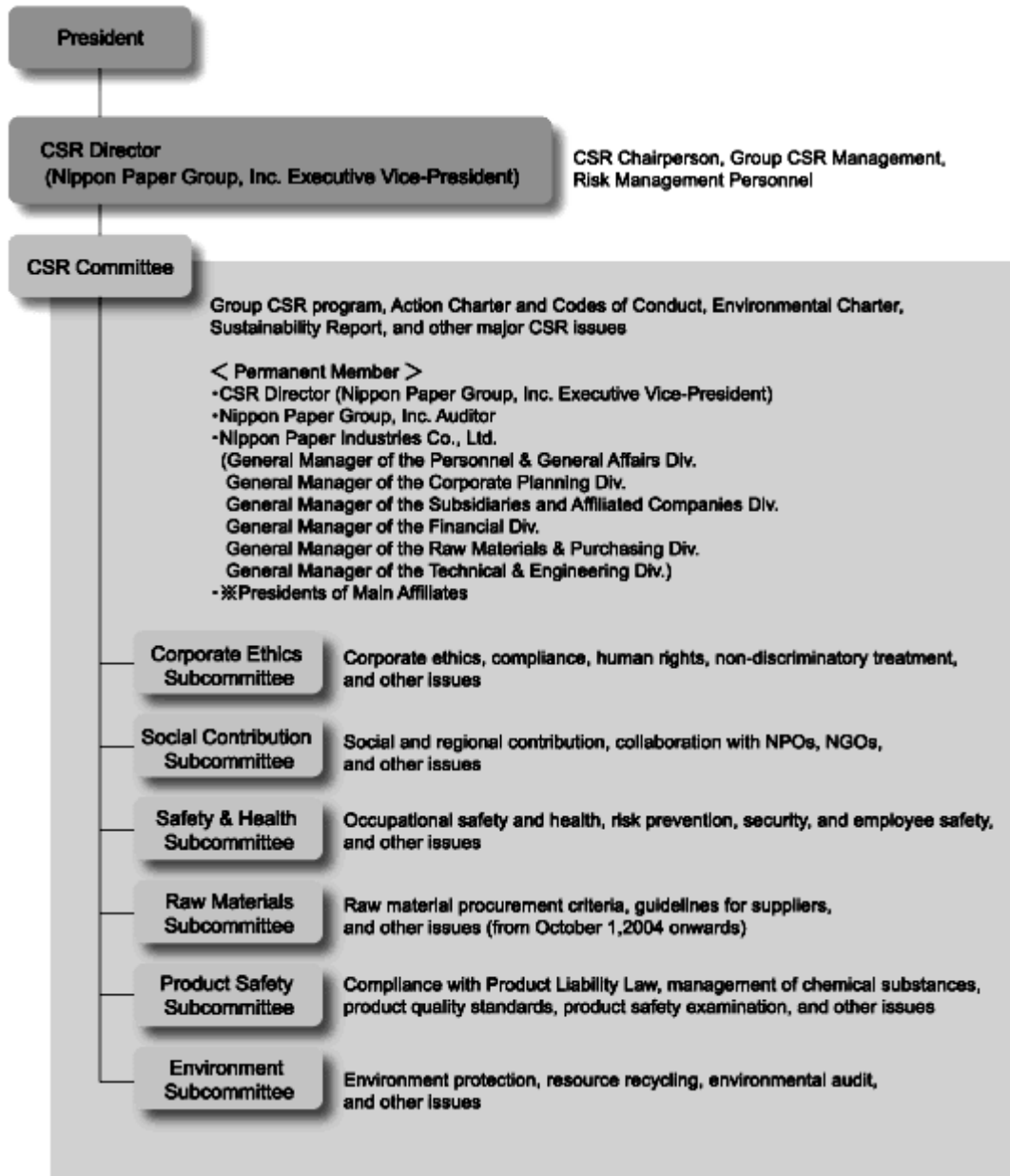
Figure 4.10 List of Main Overseas Mills

| The List of Main Overseas Mills



Figure 4.11 Nippon Paper Group's CSR Promotion Structure

(from October 1, 2003 onwards)



※ Nippon Daishowa Paperboard Co., Ltd. Nippon Paper CRECIA Co., Ltd. NIPPON PAPER-PAK CO., LTD.
 NIPPON PAPER CHEMICALS CO., LTD. NIPPON PAPER LUMBER CO., LTD. NP Trading Co., Ltd.
 Nippon Paper Development Co., Ltd.

4.2.2. Wood Raw Material

The Nippon Paper Group has been very smart in launching procurement of ‘raw materials’ by establishing plantation areas through a global supply chain management, such as from New South Wales, Australia, Victoria, Burnbury, Green Triangle, Western Australia, Victoria, Chile, South Africa, Quesnel, B.C., Canada, Peace River, Alta., Canada, Port Angels, USA, Longview, Washington, USA, and China.³⁷ The production of raw material (*Eucalyptus trees*) for wood chips and shipping with the company’s own cargo ships, owned by Nippon Company directly, transported to Japan and processed to pulp is all carried out within the company.³⁸ Nippon Paper’s basic policy to procure raw materials is, (1) environmentally friendly raw materials procurement; (2) socially aware raw materials procurement; (3) promotion of dialogues with stakeholders; Tree Farm Initiative afforestation activities in overseas countries to create sustainable sources of hardwood chips. The targets of more than 100,000 ha of afforestation area, and more than one million dry tons of wood chips supplied annually from afforested area, will be achieved by fiscal 2008. This company will acquire forest certification on 100% of the total imported hardwood chips in 2008.

Besides, the Nippon Company also established a philosophy and basic policy on ‘product safety’ in October 2004. This company considers it to be its corporate responsibility to provide safe products and services. The activities of the entire group are aimed at gaining high levels of trust from their customers and making an increased contribution to society. The philosophy is installed in the company’s determination “to work to improve safety at every stage of the life cycle of our products, from design to manufacture, supply and disposal, and to provide products and services that the public can trust.”³⁹

4.2.3. Products

This company produced 8.7 million tons of paper and paperboards in 2003 (*Japan Pulp and Paper, 2005*). The development of product quality of the company is carried out usually based on the optimal utilization of research and development (R&D) in many divisions (Figure 4.12). In case of the Nippon Paper Group, Nippon Daishowa Paperboard Co., Ltd. operates a number of paperboard businesses. Paperboard has diverse everyday applications as low-cost and light weight packaging materials, typified by corrugated paperboard and paper boxes. Meanwhile, it also manufactures specialty paper products, namely, teabag filter paper, air filter bag paper, pulp wrapping paper, meat casing paper, insulation paper, wiper

³⁷ For more information on “Overseas Ventures” in Nippon Paper’s raw materials, see *Pulp & Paper Statistics 2006*, p. 24.

³⁸ The three largest pulp and paper companies (Oji, Nippon and Daio), own at least 91 cargo ships for shipping wood chips from overseas. Interview carried out with Mr. Fujiwara, staff of Paper Museum, in Oji, Tokyo, on October 8, 2006.

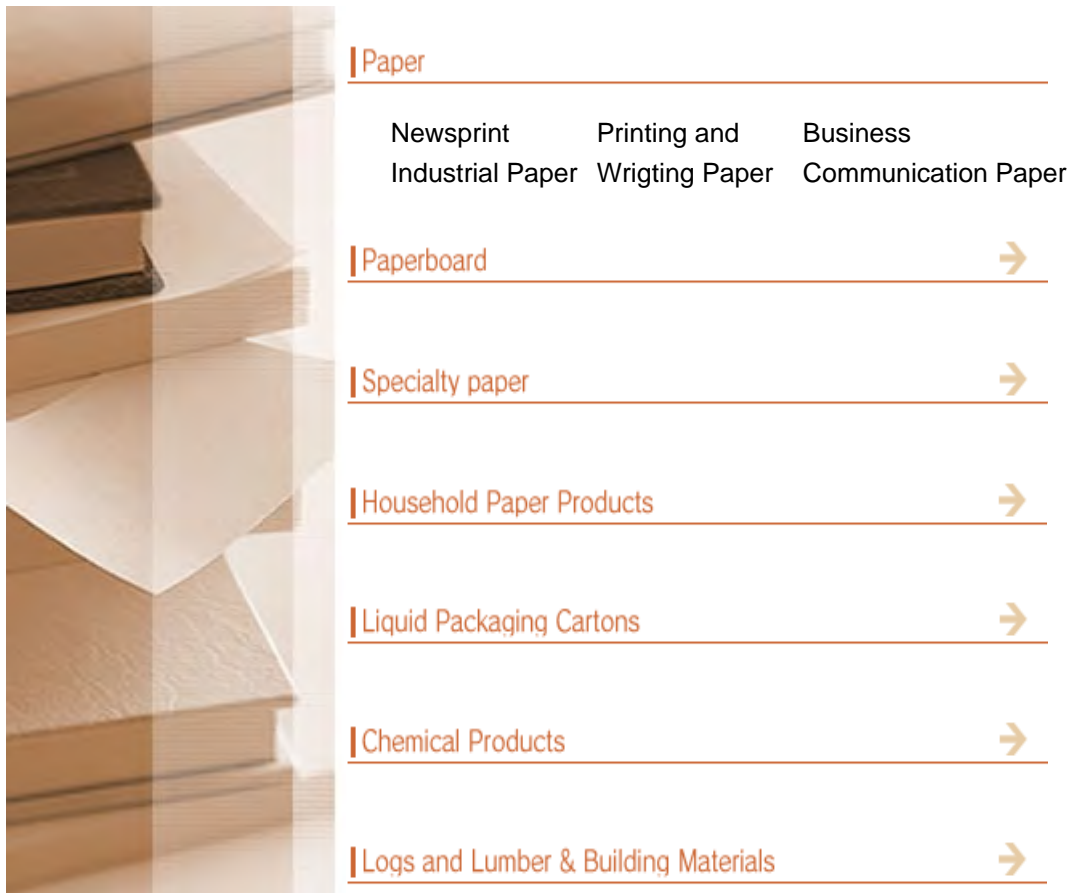
³⁹ See <http://www.np-g.com/e/csr/ideology/products.html>.

paper, tracing paper, oiled paper, facial tissue, and so on.

Nippon Paper-Pak Co., Ltd. provides liquid-packaging cartons for milk and juice with a three-pronged marketing approach involving machine sales, carton supply and maintenance service. Based on abundant expertise and outstanding technology, the company has achieved a 33% share of the liquid-packaging carton market, as the leading company in packaging for food, beverages and household items in Japan.

Nippon Paper Lumber Co. Ltd. Deals with raw wood and sawed logs, and sells domestic lumber. It also manufactures plywood and laminated lumber products, and collects and sells pulpwood, wood chips and wastepaper, including the production of cellulose fiber insulators. Nippon Paper Crecia. Co., Ltd. makes a lineup of household paper products that include two world-renowned brands, Kleenex and Scottie, which are synonyms for tissue paper. Other products namely, facial tissue, bath tissue, paper towels, pre-moistened wipes, personal-care products, and industrial-use wipes.

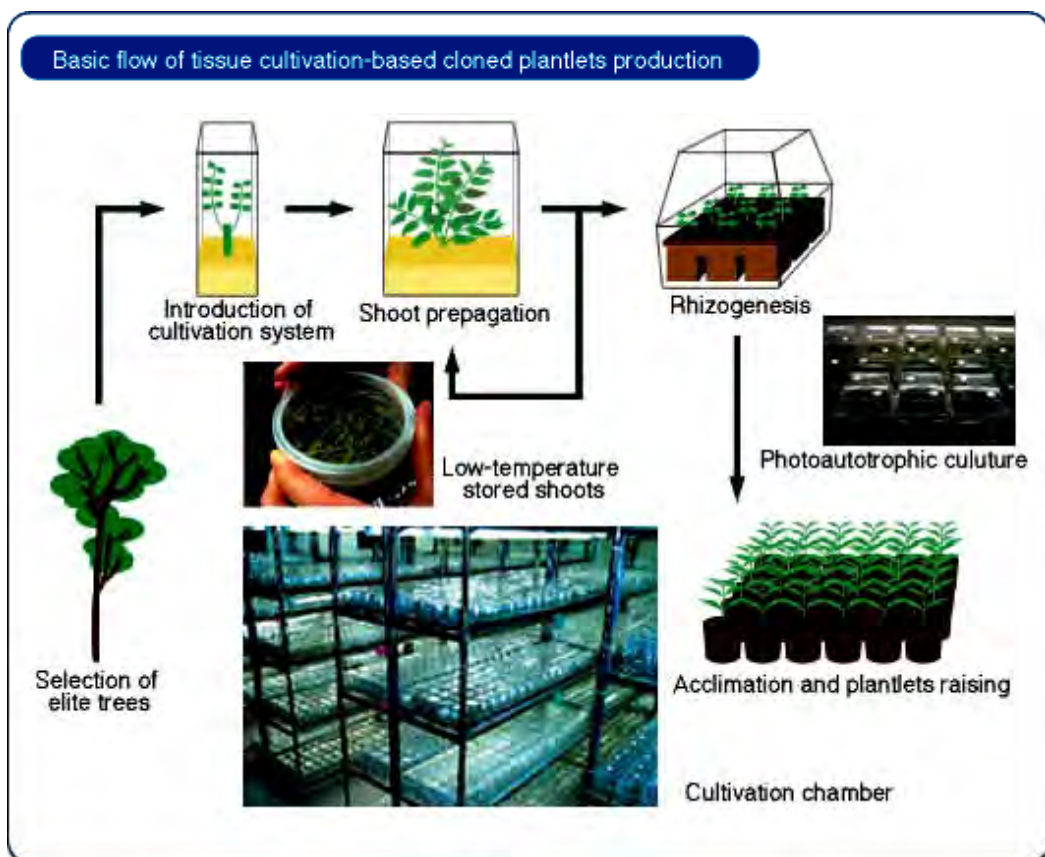
Figure 4.12 Products



4.2.4. Research and Development (R&D)

The Nippon Paper Group utilization of R&D is very significant. It considers it a strategic vision to produce high quality paper products in the future. This company emphasizes that its corporate activities in sustainable development be in harmony with nature and seeks to help achieve a recycling-based society and worldwide environmental protection, and is constantly developing new technologies and products through fresh innovation. The Company's R&D policies are "responsiveness to user needs," "augmentation of our global competitiveness," and "regard for improvement," and it conducts comprehensive R&D activities from research fiber resources through the improvement of production technology efficiency and the development of high-quality products with innovative features. Therefore, it is important to implement efficient and comprehensive R&D from raw materials through finished products. Nippon Paper Industries has consolidated its research functions in Tokyo's Kita ward, where its undertakes all of its

Figure 4.13 Basic Flow of Tissue Cultivation-based cloned plantlets production



paper and pulp R&D activities.

The Research and Development organization consists of five laboratories: (1) the Forestry Science Research Laboratory, which takes charge of forestry and biotechnologies; (2) the Pulp and Paper Research Laboratory, which develops pulp and paper technologies; (3) the Product Development Research Laboratory, which manages the development of new products to meet emerging needs; (4) and the Intellectual Property Department, which manages the intellectual property generated by R&D activities; (5) R&D Planning and Administration Department, which handles the general affairs of the division. Thus, by optimization of these R&D functions leading products are achieved constantly in the future.

One of the R&D findings is that Nippon Paper Industries has developed two tissue culture technologies known as “photoautotrophic culture technology and low-temperature storage techniques,” with which it has succeeded in mass clone propagation of *Eucalyptus globulus* and other products (Figure 4.13).

4.2.5. Nippon Paper Group Makes an Acquisition in Hokuetsu Paper Mill

Generally speaking, a company which could make acquisitions of another company requires two prerequisites: (1) a healthy managerial and profitability condition of its company; (2) the maximal utilization of R&D so that making acquisition of another company will result in more integration. Obviously, the two prerequisites above have been fulfilled by Nippon Paper Group in making acquisition of shares in Hokuetsu Paper Mills (the sixth largest paper mill in Japan). At that time, Nippon Paper purchased 13,356,000 Hokuetsu Shares (8.49%) on July 28, 2006, making it the second largest shareholder in the papermaker after the trading company Mitsubishi, which had a 24.4 percent stake on August 7 (*The Japan Times*, August 25, 2006). In a report submitted to the government the same day, the Nippon Paper Group said the shares were purchased by Nippon, a fully owned subsidiary, for a total of Y10.7 billion, or Y806 per share, on average (*The Japan Times*, August 5, 2006).

The objective of the share acquisition, according to Nippon Paper, is not intended as an acquisition of a controlling stake in Hokuetsu Paper, but aimed at potential business integration, and so on. On the other hand, Nippon Paper has been strongly aware of the importance of the strengthening of its business foundation and operational rationalization by way of consolidation and business integration, and has itself taken a lead in the industry with this respect.

Why does Hokuetsu paper refuse a takeover of her share (40 percent) by Oji Paper? It appears that this company (Hokuetsu) prefers to work with Mitsubishi and Nippon Paper. There are some arguments in favor of this. Firstly, an Oji takeover would damage shareholders value. The company said a merger with Oji would cut its pre-tax profit in fiscal year 2009 by between Y13.4 billion and Y17.9 billion. Secondly, its tie-up with Mitsubishi

would generate at least Y3 billion in additional profits, as it would include procurement and distribution benefits. Thirdly, Hokuetsu Paper’s employees mostly refuse Oji’s Paper’s acquisition. Fourthly, Oji’s takeover plan has drawn fire from local government officials and business leaders in Nagaoka and Niigata Prefecture. For example, regional lenders Hokuetsu Bank and Daishi Bank, who each have a 2 percent stake in Hokuetsu, also have refused to sell to Oji (*The Japan Times*, August 25, 2006). Mr. Masaaki Miwa (Hokuetsu President) said: “We are fully confident that we can block Oji’s attempt.” (*The Japan Times*, August 10, 2006.) Herewith, this paper highlights the business strategy of the Oji and Nippon companies (Table 4.15).

Table 4.15. Business Strategy of Oji and Nippon

| ISSUES | OJI | NIPPON |
|--|---|---|
| Raw Material | Certified Forest; 140,000 ha (2004); 300,000 ha (2011) Overseas 80% (New Zealand, Australia, Chile, China, Vietnam, Laos. Domestic 20% (Japan) | Environmentally friendly; 100,000 ha (afforestation); Harwood import 100% by 2008. Overseas 70% (S. Africa, Australia, Brazil, Domestic 30% |
| Product Scopes & Annual Sales and Profit, Total Assets | million tons of Paper and Paperboards; Y1.185 trillion sales; Y43.3 billion profit; Y1.6 trillion assets. | 8.7 million tons of paper and paper specialty; Y1.179 trillion sales; Y24.4 billion profit; Y1.5 trillion assets. |
| Product market | Aggressive expansion; Overseas (16 mills): China, EU. Full vertical integration | Aggressive expansion; Overseas (17 mills): China, EU, USA. Full integration |
| Production Facility | Japan (32 mills): R&D priority | Japan (22 mills); R&D priority |
| Management & Institutionalization | Professional managers; Merger with other companies; Listed in Tokyo SX: actively selling equity share and find out liability from bank | Professional managers; Merger with other companies; Listed in Tokyo SX: actively selling equity share and liability from bank |

Source: Processing data by writer based on information available concerning the companies.

CHAPTER V

ENVIRONMENTAL PROBLEMS

Introduction

The pollution from pulp and paper industries, which may subsequently have the effect of environmental catastrophe, should be well managed. Otherwise, it could seriously affect environmental issues and human beings such as in the case of the Minamata Itai-Itai disease. In this case, the role of indirect actors such as NGOs (Fishery and Farmers Association), local people and academics to criticize pollution was extremely significant and needs to be explored. This paper discusses how NGOs, academics and local people launched critiques on Honshu Paper and other companies because of the Edogawa River pollution in 1958 and Tagonoura harbor pollution in the 1980s.

5.1. High Level Economic Development

Japan launched her industrialization after World War Two to produce for civil markets in the 1950s. When food, clothing, chemistry and other goods became plentiful after the war, a production and marketing system naturally developed, and this led to Japan's high-economic growth period. Electricity and electronic related appliances became more common and motorization (cars, motorcycles, and so on) began to change people's everyday lives. By the end of the 1950s the production of consumer goods such as washing machines, refrigerators, transistor radios, television sets, tape-recorders, motor bicycles, cars, and the like had increased with great rapidity. Because of the intense competition between companies, there was a great deal of investment in installation to increase the efficiency of mass production systems.⁴⁰ The high-growth era also brought a revolution in consumption. For instance, parents were driven to buy television when their children started to visit neighbors' houses to watch television and failed to return home for dinner. Refrigerators and washing machines became part of Japanese family life. These symbols were later replaced by the three Cs: car, cooler, and color television.⁴¹ The concentration of the factories was in designated new areas in the Pacific coast belt that starts from the Kanto Plain and runs towards the Kansai area (Tokyo, Yokohama, Yokkaichi, Nagoya, Kobe, Osaka, and so on) continuing all the way down to Kitakyushu, passing the northern rim of the Setonaikai Sea. By 1974, the belt area alone accounted for 84.5 percent of Japan's entire industrial

⁴⁰ See Yoshihiro Hoshino, "Japan's Post-Second World War Environmental Problems," in Jun Ui (eds.), *Industrial Pollution in Japan*, Tokyo: The United Nations University Press, 1992, p. 65.

⁴¹ Shigeaki Fujisaki, "Development and the Environment," *Op Cit*, p. 15.

production.

This growth in industry brought many young people from the rural areas into the industrial cities such as Tokyo, Osaka, Nagoya, Yokkaichi and Kobe. Urbanization rapidly increased, and by 1970, 44 percent of the population of Japan was concentrated in these urban centers. In contrast, the farming areas, which had experienced an oversupply of labor for a very long time, now faced labor shortages, and this resulted in the rapid mechanization of agriculture.

5.2. Pollution Issues

During the first phase of high economic growth in 1950s-1960s, the greatest environmental pollution problem was caused by dust, smoke and other airborne particulate matter. The main source of energy at that time was coal. Dust collectors and other methods of particulate-matter control were not provided, and all of the chimneys belched forth black smoke. The effluents from sulfuric acid based pulp processing industries are the same in this regard, that is, they are not directly and immediately apparent as the cause of environmental problems. Paper companies such as Honshu in Tokyo, automotive vehicle gas emission, a major iron and steel complex in Yahata, northern Kyushu, was pouring 27 tons of particulate matter per day into the city's air, and in Kawasaki City, situated in the Tokyo Bay industrial area, the amount was 23 tons.

Also, especially in the period from 1970-1974, great damage was caused by photochemical smog and other effects resulting from atmospheric pollution attributable to auto emissions. For instance, the number of victims affected by photochemical smog totaled 200,000, counting only those cases that had been reported.⁴² In the early 1970s, almost a million persons were either killed or injured in road accidents annually. As a result, the number of school and young children who were orphaned in this way totaled more than 60,000, about 40% of whom were from families already receiving social relief at the time. These accidents were caused by environmental disruption brought about by automotive vehicles.

Along with the black smoke there was also a great amount of red smoke that spread over the sky and also water pollution in the rivers and sea. These smoke, dust, water contamination and particulate matters were the causes of pollution issues. From the end of the 1960s to the beginning of the 1970s, the so-called major pollution cases (the Kumamoto-Minamata disease, Edogawa River pollution, the Niigata Minamata disease, the Itai-Itai disease, Yokkaichi Asthma, Tagonoura's Beach Pollution, etc.) became forums for

⁴² See Tokue Shibata, "The Influence of Big Industries on Environmental Policies: The Case of Car Exhaust Standards" in Shigetō Tsuru & Helmut Weidner (eds.), *Op Cit*, p.100-101.

open discussion of polluter responsibility.⁴³ In the early 1970s, Tokyo's pollution problems were so severe that protesters began using the slogan "No More Tokyo." Although many problems remain, including nitrogen oxides levels that still exceed environmental standards, Tokyo's air is now incomparably cleaner than in those days, and fish have returned to the city's rivers.

It was obvious that Minamata disease, caused by Nippon Chiso's manufacturing, was the most massive pollution problem to strike Japan in the 1950s. The village of Minamata, located on the west coast of southern Kyushu, was traditionally supported by rice farming and by a cove in the port which allowed the production of salt. In general, Minamata disease was characterized by symptoms typical of methyl mercury poisoning, and it was described and recognized in patients who developed these same severe symptoms in 1953-1960. In the initial stage, it was discovered that 17 people in all had so far died after showing the same symptoms and the incident is characterized by a profound sense of shock at the high death-rate.⁴⁴ Meanwhile a survey was conducted for the second outbreak of Minamata disease by the Medical Department of Kumamoto University in 1971. The result of the survey indicated that 158 Minamata disease patients had been discovered in a sample of 50,000 persons. However, 114 of the 158 had already been designated Minamata disease patients, and later surveys indicated that even greater numbers than reported in the survey had also been designated as victims.⁴⁵

What was the reaction from the Minamata fishermen? From the summer and autumn of 1959, the Minamata Fishermen's Association and Fushimi Sea Fishermen's Association demanded compensation from the company for damage perpetrated by the chemical complex. The company refused to make any payments on the grounds that the cause of the disease was not understood to be related to the operation of the chemical complex. However, the company did decide to pay a small amount of sympathy money. The social tensions in and around Minamata City rose to a crescendo, and on November 2, 1959, 4,000 Fushimi Sea Fishermen congregated to demand a National Diet members' inspection of the polluted area. On the way home from this rally they broke into the factory and destroyed office equipment. This event subsequently magnified the incident in the eyes of the national news media and in the country as a whole, some three and half years after it was discovered. The labor union of this factory (Nippon Chiso) protested, and supported by the Japan Socialist Party criticized the fishermen's riot. Apparently, if this action had not been taken by the fishermen, the Minamata disease would never have become national news in Japan.

This paper would like to focus on discussion of the effect of pulp and paper industries in Japan, which eventually led to water pollution in the Edogawa River in Tokyo and

⁴³ See Jun Ui, "Anti-Pollution Movements and Other Grass-Roots Organizations," in Shigeto Tsuru and Helmut Weidner (eds.), *Op Cit*, p. 113.

⁴⁴ Jun Ui, "Minamata Disease," in Jun Ui (eds.), *Op Cit*, pp. 104-110.

⁴⁵ *Ibid*, p. 124.

Tagonoura, in Fuji City, Shizuoka Prefecture.

5.2.1. Edogawa River Pollution

This incident initially occurred while Honshu Paper,⁴⁶ which was located about 8.8 km upstream from the mouth of the Edogawa River, bought new semi chemical pulp machinery (SCP) costing Y1.1 billion from the United States in April 1958. This machine could cut wood from logging and directly process it, mixing it with water and ammonium sulfate. Although this machine could efficiently produce huge amounts of pulp, the water waste subsequently led to water pollution.⁴⁷

This factory dumped pitch black wastewater into the Edogawa River and caused great damage to the downstream fishing grounds. Based on the Fishermen's Association report, this Edogawa water pollution caused 90% of shell species (Asari, Hamaguri) to die in sea

Figure 5.1 The Edogawa River in Recent Years



Source: Photograph taken by author in December 2006.

⁴⁶ Honshu Paper was originally an offspring of Oji Paper Company, one of the Sogo Shosha. When Japan was defeated by the US allies in 1945, the US policy was to launch economic reform in Japan, and in particular the Sogo Shosha (general trading companies) were to be dissolved and their shares to be opened to the public.

⁴⁷ Discussion with Dr. Yuri Sato on October 18 and November 6, 2006; Kawashima, Takenori, 1958, "Urayasu Gyomin Sodo no Honshakaigaku-teki Kosatsu," (Legal Sociologicistic Consideration of Urayasu Fishermen Disturbance), in *Juristo*, No. 159, August 1, pp. 2-4.

near the coast; and 60% of shell species to die further from shore. Ayu fish were also not able to lay their eggs. Losses in money terms from Hamaguri production were about ¥32,570,000 and Nori (*seaweed*) about ¥22,964,000. At that time, Urayasu fishermen constituted 75 percent of the total population of 1, 6,471 million. The remaining 25 percent were categorized as being related to fishing industries.⁴⁸ Table 5.1 shows money losses suffered by fishermen in Japan affected by industrial water pollution.

On April 23, 1958, 23 Urayasu fishermen in the downstream area protested to the company concerning this pollution and demanded negotiations. There were two requests to the company. First, the company had to pay compensation to the Fishermen’s Association, which totaled ¥9,000,000 for loss of income. Second, the compensation money had to be paid after the company had installed a new machine for cleaning water to be certified by a Chiba Prefecture officer, head of the company and head of the Fishermen’s Association.⁴⁹ Unfortunately, this protest did not receive a favorable response from the company. Another protest was held by the Urayasu Fishing Cooperative Association on May 14, 1958 to the Urayasu local government, Chiba and Tokyo government officers. Unfortunately, the warning protest from Tokyo officers to the head of Honshu Paper Company could not stop the dumping of waste water into the river. Thus, the greatest protest from fishermen and the Fishermen’s Cooperative, which was managed by Okajima Tasaburo,⁵⁰ was held on June 10,

Table 5.1 Water Pollution by Industries and Fishermen Victims in Japan

| Year | Number of Cases | Amount of Loss Due to Pollution (1,000 kan) | Value of Loss of Money (1,000 Yen) |
|------|-----------------|--|---------------------------------------|
| 1950 | 295 | 7,229 | 65,340 |
| 1951 | 333 | 5,494 | 104,990 |
| 1954 | 706 | 2,454 | 379,054 |
| 1956 | 478 | 2,800 | 778,812 |
| 1957 | 810 | - | 1,342,508 |
| 1958 | 749 | - | 5,231,133 |

Source: Department of Fishery, 1958.
1 Kan is 3.75 kg (Japanese Weight).

⁴⁸ Discussion with Yoko Kawano, on November 3, 2006, Keiko Wakabayashi, 2000, *Tokyo Wan no Kankyo Mondai Shi*, (History of Environmental Problem of the Tokyo Bay), Tokyo: Yuhikaku Press, pp. 303-312.

⁴⁹ Keiko Wakabayashi, *Op. Cit.*, pp. 328.

⁵⁰ In fact Okajima Tasaburo was not a fisherman, but the owner of a shop. He was a powerful man from a Yakuza group, as seen by tattoos on his body. He eventually worked with and made a collusion with the Oriental Lando Company Group (Mitsui Real Estate, Kessei Dentetsu Railway and Asahi Tochi) to provide land in Urayasu for the Disneyland area in the 1960s. Okajima eventually became a rich man and mayor of Urayasu City. Because of his criminal action, Okajima was subsequently arrested by police and put in jail.

1958, in which ten buses and 1,000 people came to the Diet (parliament) and the Tokyo government office. The head of the group and other members met and discussed with Shojoro Kawashima, a member of the Diet from Urayasu. Unfortunately, both parties were unsatisfied, particularly the fishermen's side. On the return journey home, in the afternoon, the head of the group and other Fishermen Association members requested the bus drivers to go to the company's location. Although police stationed in front of the company totally forbade protesters to directly enter the company premises, they eventually entered the factory and cut the pipeline through which waste water flowed into the river.

This protest turned into an incident between fishermen, factory workers and policemen. Heavy injuries were suffered by 35 men and 108 suffered light injuries. The total number of people injured was 108, including 37 policemen, three journalists and three persons from the company. Subsequently 81 men were arrested. The effect of the Urayasu fishermen's disturbance was that on June 13, 1958 the Tokyo Governor required the factory to cease operations. The Diet also proposed an investigation of the Urayasu incident, required cessation of operations, and paid "compensation" to the fishermen. The response of this company subsequently was to pay compensation of about Y5,100,000 to the Urayasu Fishing Cooperative Association.⁵¹

This Urayasu fishermen incident invited academic critiques, one from lawyer Takenori Kawashima stating that "this incident totally reflected that the legal condition could not be realized in the field. Even its implementation showed discrimination against local people, who had no political bargaining power due to being local people protesting environmental pollution. Other stakeholders (local government, businessmen, Diet and police) simply gave responses that eventually led to the incident."⁵²

Other scientists gave comments regarding the Edogawa River Pollution, such as Kenji Yamazaki from Meiji University and Tomoko Yamazaki from Iwate University, that the movement to revive Tokyo Bay, however, was initiated among local inhabitants and the activities of fishermen. When we open the history on the 'environmental pollution,' it becomes clear that "the fishermen have been sensors for pollution and subjects of experimentation in some cases such as at Minamata in Kumamoto, the second Minamata (Niigata), Yokkaichi, Tagonoura, and so on. Furthermore, they said that this Edogawa pollution incident triggered the legislation of two laws governing water and air quality.⁵³

The positive perspective of this Urayasu incident was that the central government proposed the drafting of a new law to the Diet (National Parliament) of an "Environmental Law." This was the initial step on 'environmental law' in Japan, coming on December 25, 1958. This law consists of two main emphases, namely, first, a law on the protection of air

⁵¹ Keiko Wakabayashi, *Op Cit*, p. 334.

⁵² Kawashima Takenori, *Op Cit*, p. 3.

⁵³ For further information see paper by Kenji Yamasaki and Tomoko Yamazaki, "Sustainable Development of Tokyo Bay: Collaborations of anti-Reclamation Movement and Urban Fishery," 2000, pp. 1-4.

quality by factory management; and second, a law on water-waste from factories. There were actually two shortcomings in the realization of these laws. Firstly, harmony between industrial holders and people's lives still could not be reached. Secondly, the registration for water areas systems was difficult to realize in reality. This happened because negotiations were still not clear, especially regarding the definition of 'registration' among stakeholders in water areas systems, and also registered versus unregistered water areas systems.

Observing the impact of pollution, the Diet released an "Anti-Pollution Act" in August 1968 covering seven leading issues namely air, water, soil, sound, earthquakes, landslides, and contamination. The purpose of this Act was to protect Japan from pollution of various types, which could subsequently affect Japanese people's lives and the quality of the Japanese land area.

5.2.2. TAGONOURA HARBOR Pollution

The Tagonoura water pollution in the 1980s was caused by waste liquor from paper and pulp manufactories. The pollutants were found to contain such ingredients as fiber, lignin, resin, fatty acid salt, inorganic fillers, mixtures of microorganisms, and others produced from factories. When the polluted water is mixed with seawater, SS becomes more likely to be flocculent and cohesive. Finally, the SS that flows into Tagonoura harbor has a concentration of 30 to 40 ppm, which means approximately 20,000 tons per annum in Shizuoka Prefecture and Fuji district where there were 142 paper-pulp factories, of which 5 are owned by major manufacturers (such as Tokai Pulp & Paper, Tokushu Paper, Kida Mill, four Oji Paper factories, Nippon Paper Creca, etc.). Those factories utilized abundant water from the Fuji Mountain System and used to pump up 1.25 million cubic meters of water per day from numerous wells and discharge the water in the rivers, i.e. the Numagawa, Wadagawa, Egawa, Kouruigawa, Akafuchigawa, Takigawa and Uruigawa, and so on, and in streams in the estuary of Tagonoura Harbor.⁵⁴ At present, 81 percent of the industrial effluent is being discharged in Tagonoura Harbor through the industrial drainage channels that were constructed subsequently (Figure 5.2). The quantity of the above waste water amounts to 1.2 to 1.4 million cubic meters per day. The rest, namely 19%, is discharged into the rivers flowing into Tagonoura Harbor. Therefore, the sludge accumulating in the harbor contains not only masses of fibrous fine organic flocks, but also earth and sand that have flowed down from the rivers. This earth and sand is from black mud having an offensive odor from H₂S developed within the mud, and when exposed to the air its color changes to dark gray.⁵⁵

⁵⁴ For further information, see Terumune OGUSHI, et al. 1998, "Water Pollution in Fuji District and Contaminated Rotten Mud of Tagonoura Harbor," paper in Institutes of Social Science Journal, Faculty of Engineering, Chuo University, p. 131.

⁵⁵ *Ibid*, p. 136.

Figure 5.2 Water Pollution in Tagonoura Harbor affected by Pulp-Paper Factory Mills



Source: OGUSHI, Terumune (et.at.) (1998). Water Pollution in Fuji District (paper).

Although the contaminants have been reduced, however, the volume of pollutants discharged from the industrial drainage channels has too large a load compared with the self-purification capacity of the waters around Tagonoura Harbor. In the harbor, SS continues to accumulate, and the sediments are turning into sapropel rotten mud. Consequently, virtually no fish or shellfish are living and breeding in the harbor. This pollution subsequently caused fishermen to lose income.

The reaction and hard protest from anti-pollution movements carried out by the local residents, fishermen and general public to have the pollutants reduced were very strong. An agreement on pollution control was concluded between Fuji City and the Paper Companies concerned, whereby a regulation was established on the effluent concentration and the companies eventually set up antipollution facilities. Then, the problem arises how to control the load of pollutants discharged into the Tagonoura Harbor water area and reduce it to within the area's self purification capacity. The solution to overcome this critical problem is a stricter application of the environmental quality standards. Namely, those standards should be applied strictly to the relevant rivers rather than to the seawater area and to raise the

applicable water quality standard to a level at which fish can live. The next step to take for that purpose is to build industrial effluent treatment facilities where waste water from factories will be purified to a quality level at least more desirable than the water flowing out of Tagonoura Harbor at present, and the water thus purified will be discharged directly to seawater areas outside the harbor without passing through the rivers running into the harbor and through the harbor itself.

5.3. Stakeholders' Reaction on Environmental Destruction

5.3.1. Analysts Comment

Jun Ui, Professor of Economics in the Institute of Regional Studies, University of Okinawa, launched a critical comment on environmental destruction from an academic point of view. He said that critical pollution incidents occurred in Japan due to political attitudes, and the misguided supervision provided by national and local governments functioning in collusion with business organizations (private companies) greatly exacerbated environmental problems. In this case, pollution victim-based citizens' movements were suppressed on the basis of national security. In the post-Second World War period, the national government did not change these basic structures, and government policy has consistently been one of providing protection for business organizations. In pollution-related disputes, it was common that the legislature stood proxy for corporations, and even anti pollution agreements concluded between municipalities and enterprises were used as a shield to protect both the enterprises and municipal authorities from victims' actions. The symbiotic relationships between Japanese politics and business are now so solidified on an organizational level that they represent true state monopoly capitalism. Under the aegis of the conservative party (Liberal Democratic Party/LDP) that has long ruled Japan, officials in the highly organized government bureaucracies take management positions in large corporations upon their retirement from government service, or become conservative politicians. This symbiosis between business and government is to be found in all industrial sectors.⁵⁶

Another analyst, Tokue Shibata, is former Director of the Tokyo Metropolitan Research Institute for Environmental Protection, an institute founded by the Metropolitan Government in 1968. Since that time, the Japanese government has placed heavy emphasis on nurturing the automobile industry (such as Toyota, Honda and Nissan, etc.), offering various incentives to manufacturers and wide-ranging facilities. Firstly, a tariff-barrier was set up in a move to protect the industry against powerful Western competitors. Secondly, special tax benefits were granted to reduce the tax burden and encourage capital accumulation. Thirdly,

⁵⁶ Jun Ui, "Overview," in Jun Ui (eds.), *Industrial Pollution in Japan*, *Op Cit*, pp. 2-3.

investment in plant and equipment was facilitated by extending long-term, low-interest loans through government sponsored financial institutions. Fourthly, limits to the volume of automobile exhaust gases were established in October 1972. The guidelines provided for a reduction of up to one tenth of the current concentration of carbon monoxide (CO) and hydrocarbons (HC) by the fiscal year 1975; and for nitrogen oxides (NOx) by the fiscal year 1976. This regulation for automobiles in Japan, especially for Tokyo Metropolitan City, was based on the guidelines from the Environmental Agency of Japan on 'Environmental Pollution Control' with regard to establishing a standard for the control of auto emissions.⁵⁷

In fact, in the 1950s, prefectures such as Tokyo, Osaka, and Kanagawa had already enacted ordinances for pollution control. Even so, these merely regulated the procedure for approving the installation of those factories likely to cause air and water pollution. Thus, local governments had to revise their ordinances so that more proper and effective regulation could be enforced with regard to new types of industrial pollution. In the course of this process, arguments as to the compatibility of national laws and local ordinances arose and had to be properly adjusted.

5.3.2. *The Role of Non-Governmental Actors*

By the end of the 1960s, anti-pollution movements had become strong nationwide. The diligent work done by supporters of Minamata disease victims as well as other movements resisted corporations that continued to poison the biosphere by refusing to process their wastes. In 1964, citizen's movements were able to stop the planned construction of large petrochemical complexes in the cities of Mishima and Numazu on the Pacific coast. Also Narita's *farmers* launched a resistance movement against the construction of Narita Airport, which provided a great deal of encouragement to local citizens' movements all over Japan.

The specific character of Japanese nature conservancy and anti-pollution movements derives from the fact that they started as "federations" of lower middle- class persons, such as school-teachers, local government workers, small shopkeepers and landlords, as well as fishermen and farmers, who are mostly outside the market economy, with the central core nevertheless still among the lower-middle and poorest classes.⁵⁸ There were some common tendencies among many of the local movements during the 1970s. The target of this local movement was frequently the strengthening of local self-governing bodies, since those development projects that are targeted for resistance are mostly prepared, or supported, by central government. Local movements are basically populist in character.

The pattern of organization derives from a local organization, already existing,

⁵⁷ Tokue Shibata, "The Influence of Big Industries on Environmental Policies: The Case of Car Exhaust Standards," in Shigeto Tsuru & Helmut Weidner (eds.), *Op Cit*, pp. 44-102.

⁵⁸ Jun Ui, "Anti-Pollution Movements and Other Grass-Roots Organizations," in Shigeto Tsuru & Helmut Weidner (eds.), *Op Cit*, pp. 112-114.

becoming the basis of the movement. In this case, most organizations and formal groups retain a pyramidal hierarchy of leadership over its members. In large-scale projects, such as the construction of oil or coal facilities, and pollution from pulp and paper, mining, chemistry, and so on, the fishermen's and farmers' cooperatives concerned frequently began to resist; although these groups are rather susceptible to pressure from government and industry holders, sometimes being forced in the end to accept monetary compensation for the loss of fishing or farming rights. A new tactic towards the end of the 1960s was court action, which proved quite useful. The victims of pollution (such as Minamata disease in Kumamoto and Niigata, Itai-Itai disease, Yokkaichi asthma) decided to go to court because there were no other forums for open discussion of the cause and effect relationship and polluter responsibility.

5.3.3. *The Response from Central and Local Government*

The attitude of central government to local movements has consistently been to regard them as a problem of 'national security,' reacting with hostility and oppression under a policy that was designed to protect industry. In 1970, this government policy was brought under explosive criticism on the part of public opinion, so that the government proposed a dozen pollution control laws in the National Diet and decided on, and eventually established, the "Environmental Agency" in 1971. The main task of this Agency is responsibility for environmental problems. This represented some progress in the actual control of pollution, when compared to the former legal system. The Environmental Agency is not a fully-fledged ministry but a special department (*gaikyoku*) of the Prime Minister's Office (PMO). The legal status given to the heads of ministerial agencies involves assisting the Prime Minister in his role as head of the Prime Minister's Office in the administrative activities under his supervision. If necessary, they are able to resort to the Prime Minister as a final measure in order to break any deadlock caused by severe inter-ministerial conflicts. According to one conventional definition, supplied by Prof. Isao Sato of Sophia University,

"...in some cases, they are not sufficient in size to be an independent ministry and, in other cases, their administrative affairs relate to the business of several ministries so that it is considered inappropriate for any one ministry to assume overall responsibility for them."⁵⁹

Further, three research and training institutes are attached to the Environmental Agency. Among them, the National Institute for Environmental Pollution Research, which began functioning in 1974, is located on the site of the Tsukuba National Academic Center and has a staff of about 250, more than 27% of the Agency's total staff of 914 in 1985.

In realization of the 'environmental law,' the central government has transferred the

⁵⁹ See Tsunao Imamura, "Environmental Responsibilities at the National Level: The Environment Agency," in Shigeto Tsuru & Helmut Weidner (eds.), *Ibid.*, pp. 43-44.

implementation of certain tasks to local government officials, and a number of national laws prescribe the duties of local government. Local government ordinances, enacted for the protection and improvement of the environment, can largely be classified into the following categories:

- 1) ordinances for pollution control;
- 2) ordinances relating to general environmental policy;
- 3) ordinances for nature conservation
- 4) Other ordinances for specific objectives, e.g., for environmental impact assessment.⁶⁰

Ordinances for pollution control provide the regulatory schemes for pollution in the respective areas of jurisdiction. They prescribe the regulations standards, facilities and substances subject to the regulation, the method of inspection and monitoring, etc. All prefectures have enacted such ordinances for pollution control and, in addition, 499 municipalities have enacted similar ordinances. Some local governments have also adopted administrative guidelines, for preliminary consultation and granting permission to site and install factories and plants, as designated by prefecture governors or mayors. For example, in Japan, the metropolitan government of Tokyo enforced a revolutionary ordinance for the prevention of pollution in 1969, centered on a declaration of the basic human rights of Tokyo's citizens, speaking specifically of a 'comfortable life' for all her citizens.⁶¹ Under strong pressure from citizen groups and progressive local authorities, the Japanese automobile industry had to seek to improve car engines so that they would consume less fuel. This was their basic attitude towards solving the problem of air pollution caused by gas emissions. They were more or less pressured into doing so by the grassroots campaigns. As a result, remarkably efficient and economical engines came onto the Japanese market from about 1975 onwards.

Finding Results

Japan as rank number three exporter of paper, reaching 30.8 million tons in 2004, after the United States and China, has properly managed pulp and paper industries both upstream and downstream. Japan is really aware that she does not own rich resources; therefore, the pulp and paper companies have optimized functioning R&D (*Research and Development*) for many strategic developments. Firstly, how the companies (Nippon and Oji) invent the best quality seeds (*Eucalyptus globulus*) and plant with an *afforestation* program for obtaining productive timber as raw material from overseas. This point is the so-called raw material procurement, categorized as sustainable forest management, and Japanese

⁶⁰ Hidefumi Imura, "Administration of Pollution Control at Local Level," in Shigeto Tsuru & Helmut Weidner (eds.), *Ibid*, p. 62.

⁶¹ Tokue Shibata, *Op Cit*, pp. 107-108.

companies have properly managed their raw materials (timber) as a strategic keyword of “upstream level” activities in their industries. From this perspective, Oji and Nippon Companies fully understand the need to minimize the effect of ecological damage downstream, such as flood, soil erosion, forest fires, and so on. In this case, Japan’s forests and their environment are properly managed. The consequence is very rare occurrence of river floods of and soil erosion in some districts in Japan as long as sustainable forest management is suitably carried out. On the other hand, mostly Japanese pulp and paper companies prefer to plant industrial timber plantations (HTI) for raw materials procurement, which highlights environmentally friendly activities overseas from which 80 percent of the total wood demand is procured, compared with domestic orientation.

These companies really know that if they are found guilty of ecological damage such as utilizing illegal timber for their industrial raw material, Japanese consumers could boycott their products and criticize the company for obtaining their raw materials from unfriendly environmental or unsustainable forest management.

Secondly, R&D targeted the invention of innovative technology in terms of water treatment equipment to minimize water pollution. This strategic invention was taken by Oji and Nippon after the tragedy of Honshu Paper (finally merged with Oji Company) and other paper industries seriously affected water pollution levels in the Edogawa River in 1958 and Tagonoura Harbor pollution in 1980s. Yet, the Urayasu Incident, caused by Edogawa River pollution, had a positive effect in the adoption of environmental laws by the central government of Japan, which eventually proposed drafting a law in the Diet (National Parliament) on December 25, 1958. This environmental law aims as a national regulation to prevent pollution, which emphasizes protection of air and water quality from many industrial holders. As a result, environmental pollution was reduced relatively greatly in many districts in Japan, as company holders, especially pulp and paper industries, complied with this environmental regulation. From the viewpoint of implementation, this clearly shows indiscriminate action; if stakeholders, especially industry holders, are found guilty they must be punished.

Thirdly, R&D activities were aimed toward the discovery of new possibilities in excellent paper and paperboard products (newspapers, journal papers, and so on). As we know, Japanese paper consumption is very large and usually high quality paper is requested for many printed publications. These products Japan also exports to Southeast Asian countries such as Indonesia (7.656 tons), Vietnam (53,272 tons), Thailand (165,181 tons), Philippines (22,982 tons), as well as to China (3.1 million tons), S. Korea (177,430 tons) and Taiwan (169,819 tons). (Pulp & Paper Statistics 2006)

PART TWO: PULP AND PAPER INDUSTRIES IN INDONESIA
CHAPTER VI
DEVELOPMENT OF THE PULP AND PAPER INDUSTRY

Introduction

This paper discusses the role of government as direct actor on the promotion of pulp and paper development in Indonesia, the discussion focusing on government policy, regulation, facilities and providing land for *Hutan Tanaman Industri* or HTI (Industrial Tree Plantation) for raw material in the Soeharto administration and reformation era. This access has been actively provided by government to encourage the private sector, whether domestic or foreign investors to invest their capital, technology and stimulate job creation, especially in the pulp and paper industries.

6.1. Background

Historically, the pulp and paper industry in Indonesia began during the Dutch colonial era. The first factories were built in 1923 in Padalarangan, West Java and in Probolinggo, East Java in 1939. Both factories used rice straw (*merang*) with a soda process that produced around 4,000 tons annually and were built by a Dutch company named *Gelderland & Tielens* from Niimegen.⁶²

When Indonesia obtained independence in 1945, the Indonesian government built several paper factories, such as Blabak (Magelang), Pematang Siantar (North Sumatra), Basuki Rachmat (Banyuwangi, East Java) and Gowa (South Sulawesi). The role of government was very significant in encouraging the pulp and paper industries. The Soeharto regime issued Presidential Decree No. 20 in May 1975 to effectively manage forestry industries, which included pulp and paper industries. During *Pelita I*⁶³ (1969-1974) there were just six factories in operation, with total production reaching 9,000 tons annually. During *Pelita II* (1975-1980), the total number of pulp factories reached 27 privately owned and six state owned, with a total production capacity of 245,770 tons. Meanwhile in 1987, there were 36 pulp and 41 paper factories. Among these factories, 12 were integrated into larger pulp and paper companies, such as Indah Kiat, Kertas Kraft Aceh and Kertas Leces. As an illustration, the Board of Coordination and Capital Investment (*BKPM*) stated that by July 1991 there were 82 approved pulp and paper companies. 72 factories were approved for

⁶² Interview with M. Mansur (Head of the Presidium of Pulp and Paper Association) in Jakarta, July 2001.

⁶³ *Pelita* (Pembangunan Lima Tahun: Five Years Development). The Soeharto regime launched the familiar 'Pelita' program for economic development continuously every five years during his presidency period from 1969 to 1998.

domestic investment (PMDN), with total investment recorded at Rp.15.5 trillion and ten from foreign investment, with total recorded investment at Rp.4.8 trillion. Total investments for the pulp and paper industry were Rp.20.3 trillion.

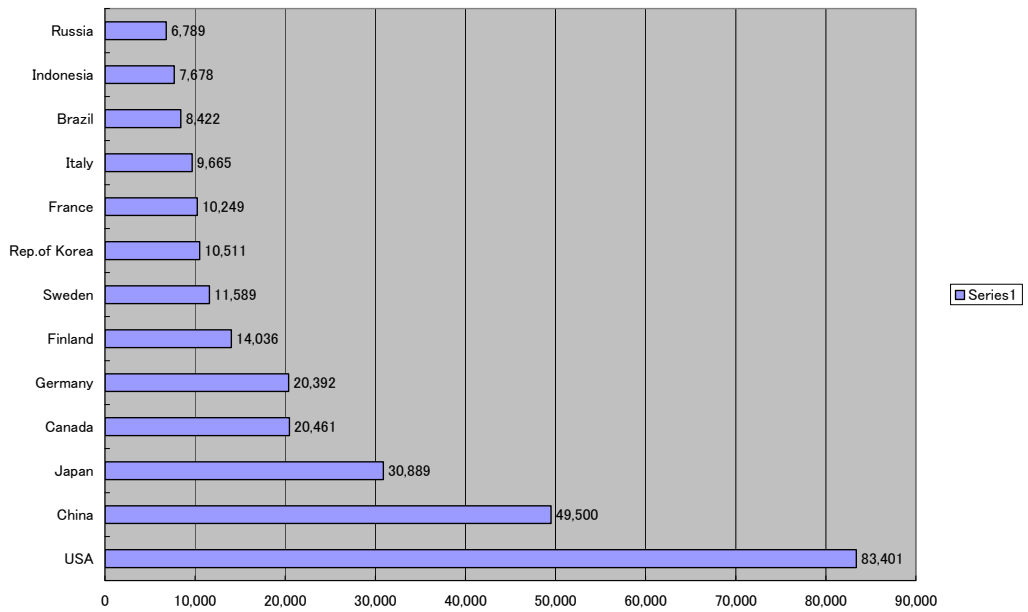
6.2. *Development of Pulp and Paper*

The 1990 report registered that the total capacity of the paper industry was 1,716,000 tons, yet total production was 1,438,100 tons. This means that factories are working at 83.80 percent capacity. If compared with the production capacity of 292,000 tons in 1980, there was a surplus of production. In 1995 paper production was rapidly increased to 2,946,950 tons annually, or 88.9 percent of the total capacity of the domestic paper industry, but, in 2004 the production of paper rapidly developed to reach 7,678 million tons, which consists of 4,123 million for paper and 3,555 million tons for paperboard. This position ranks Indonesia number twelve among thirteen major countries with the largest paper production (Figure 6.1). Obviously, there is a close correlation between consuming countries with the total production of paper. For example, if the United States, China and Japan are by population huge and economically developed, certainly paper and paperboard consumption is also rapidly increased (Figure 6.2). In contrast, in terms of per capita paper and paperboard consumption, a totally different result from population size is obtained, and so this really depends on the progress of many sectors within the respective countries (Figure 6.3). For example, advanced countries clearly show very high values, such as the United States (312.0 kg/cap), Japan (246 kg), Germany (235.9 kg), Canada (222.5 kg), U.K (United Kingdom) (208.8 kg), and so on. On the other hand, in developing Asian countries the value is still very low, less than 100 kg per capita per year, such as China (41.6 kg), Brazil (39.2 kg) and most ASEAN countries (30 kg). Indonesia consumed the least, at 16 kg per capita per year in 2004,⁶⁴ indicating strong growth potential of domestic demand. Comparing with 1989, the value had just reached 5 kg per capita. However, in the 2000s the demand for paper products is rapidly growing in Asia-Pacific countries and other regions.

The global market, supply and demand balance is practically determined by the world's large paper producers such as United States, Japan, China, Scandinavia, and Western Europe. For example, demand for paper and packaging products accounted for approximately 18.5% in 1995, growing from only about 10.1% in 1985. Obviously, this growth is closely related with economic activity. In terms of products, printing and writing paper accounted for at least 30%, while packaging accounted for 38% of the total volume in consumed in Asia. In recent years, the 2000s in East Asia and other Asian countries, the average annual growth

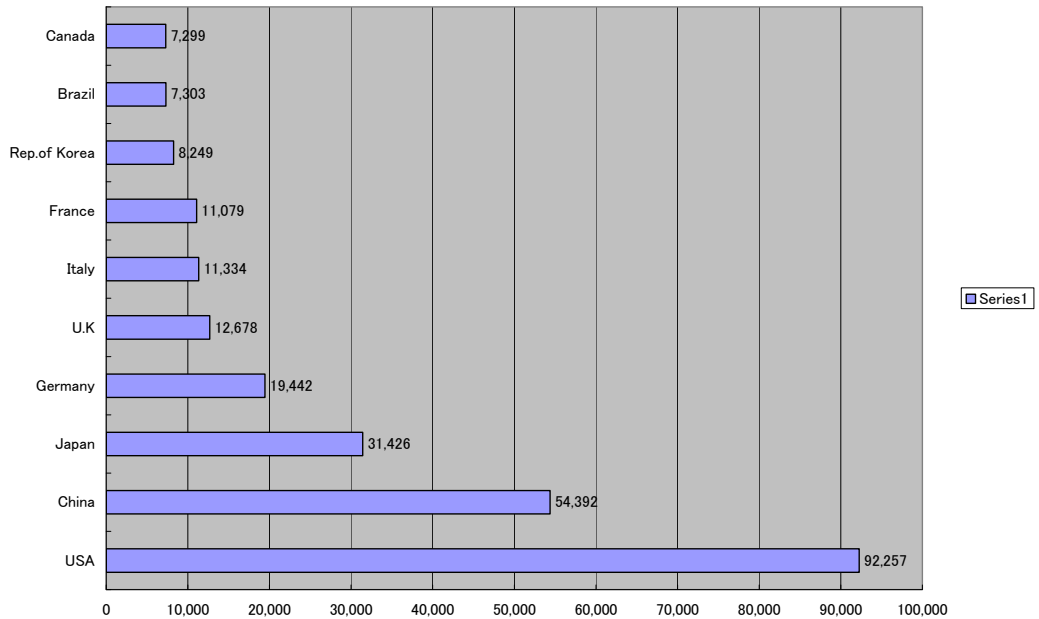
⁶⁴ For further information, see Farid Harianto, et al., "The Indonesian Pulp and Paper Industry," in Yuri Sato (ed.). 1998. *Changing Industrial Structures and Business Strategies in Indonesia*. Tokyo: IDE, pp. 37-41.

Figure 6.1 Paper Industry by Major Countries (unit 1,000 tons) in 2004
Paper & Paperboard Production by Quantity, World total 359,599 million tons



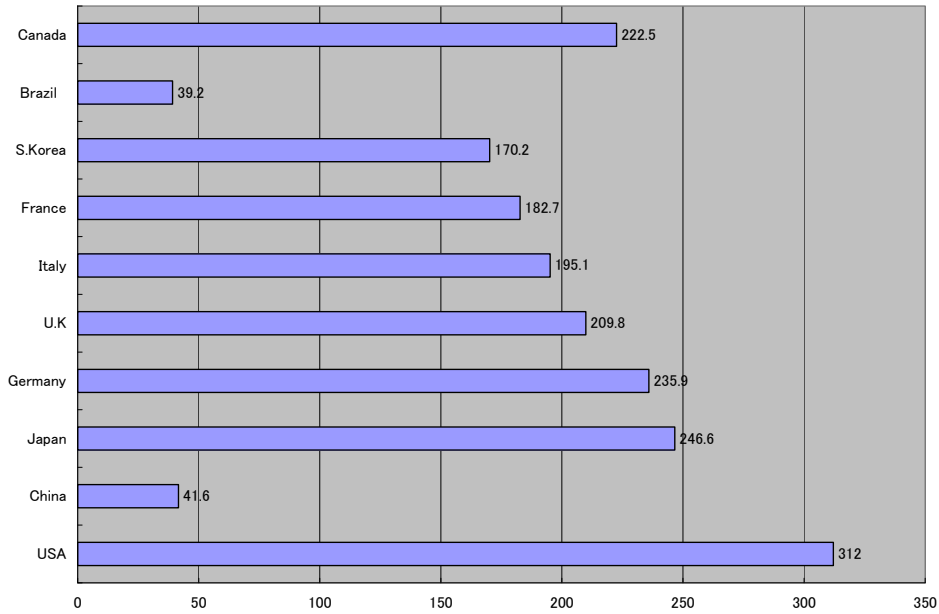
Source: *The Japanese Pulp and Paper Industry in Charts and Figures (2005)*, published by Japan Pulp and Paper Co., Ltd, p. 45.

Figure 6.2 Top 10 Paper and Paperboard Consuming Countries (unit: 1,000 tons)



Source: *Ibid*, 2004, p. 47.

Figure 6.3 Per Capita Paper and Paperboard Consumption of Top10 Countries.



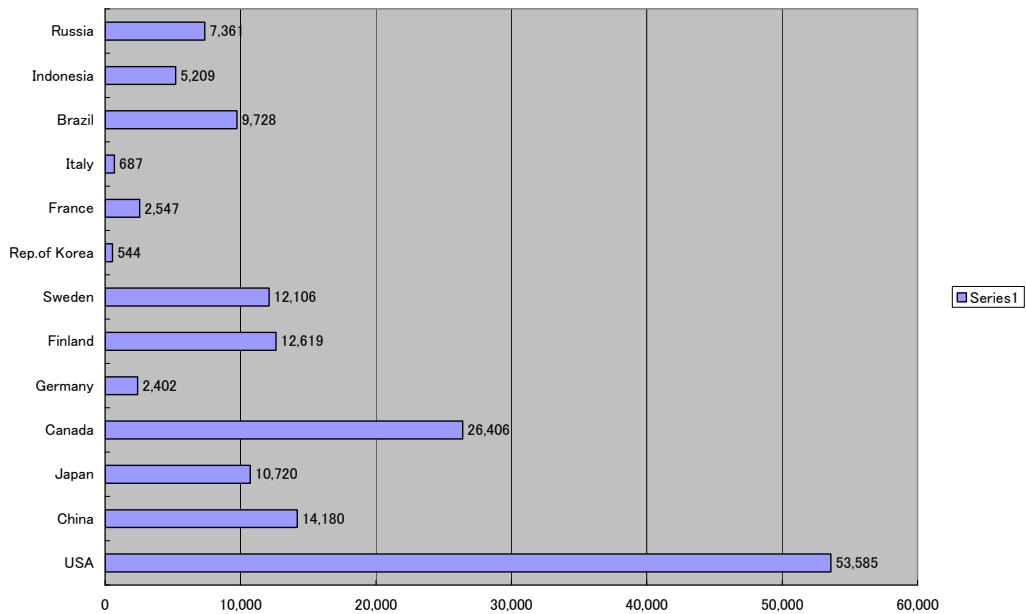
Source: *Ibid*, p. 47.

rate is about 3.3% due to rapid GDP growth. Increased per capita consumption of printing and writing paper is occurring because of rising education and literacy levels.

In 1998 the production of pulp factories increased to 4,106,200 tons per year, or 34% growth. It rapidly increased thereafter to become 5,209 million tons in 2004. The position of Indonesia became number nine among the major countries with the largest pulp production (Figure 6.4).⁶⁵ Therefore, there is a correlation between increasing pulp production with world consumption of paper. In reality, long fibers are still imported, because domestic factories cannot produce them. For example, in 1987 232,500 tons of long fiber was imported, decreasing in 1990 to 216,700 tons. General paper imports in 1987 decreased from 144,400 tons to 123,600 tons in 1990.

⁶⁵ See *The Japanese Pulp and Paper Industry in Charts and Figures* (2005), published by Japan Pulp and Paper Co., Ltd, p. 45.

Figure 6.4 Pulp Industry by Major Countries (unit: 1,000 tons)
Pulp Production by Quantity World Total 188,496



Source: *Ibid*, p. 45.

There are two types of pulp and paper factories, both integrated and non-integrated.⁶⁶ In a 1995 research report, it was explained that the total number of *non-integrated factories* was 46, consisting of 41 paper factories and 5 pulp factories. Large paper factories which are non-integrated, such as Tjiwi Kimia, which produces 394,000 tons annually, and Indah Kiat Pulp and Paper in Serang, which produces 300,000 tons/year, are under the Sinar Mas Group management. Other paper factories are Fajar Surya Wisesa, which produces 200,000 ton/year, Aspex Paper, with 190,000 ton produced annually and Surya Agung Paper, which produces 172,700 ton annually (Table 6.1).

The pulp and paper industries absorb 110,000 workers and receive foreign exchange earnings of US\$3 billion, consisting of US\$707,409,000 from pulp and US\$2,012,494 billion from paper, while finished products (furniture) totaled US\$289,077.

The second type of factory is the integrated pulp and paper factory. This type is where the company has a pulp factory and inherently owns a paper factory. Based on the 1995 report, there are 11 factories of this type, with a production capacity of 1,304,800 tons of pulp/year and 1,309,600 tons of paper/year (Table 6.2).

⁶⁶ For further information in terms of pulp and paper factories which are integrated and non-integrated, see *Studi tentang Industri dan Pemasaran Kertas dan Pulp di Indonesia*, Research Report the CIC Consulting Group, Jakarta, 1995, pp. 7-10.

Table 6.1 Pulp and Paper Companies and Capacities in 1990

| Company Owner | Factory Units | Pulp (ton) | Paper (ton) | % |
|--------------------|---------------|------------------|------------------|--------------|
| State | 6 | 396,400 | 422,900 | 13.78 |
| Private (domestic) | 30 | 246,100 | 2,124,700 | 69.17 |
| Private (foreign) | 5 | 465,000 | 523,900 | 17.05 |
| Total | 41 | 1,107,500 | 3,071,500 | 100.0 |

Source: The Indonesian Paper Trade Directory, 1991. See, Perjalanan Secarik Kertas (The Journal of Sheet Paper), Walhi, 1992, p. 34.

Table 6.2 Integrated pulp and paper factories and their capacities

| Company | Location | Pulp (ton/year) | Paper (ton/year) |
|----------------------|------------------|------------------|------------------|
| Eureka Aba | Mojokerto | 3,300 | 51,000 |
| Indah Kiat Riau | Riau | 790,000 | 254,000 |
| Kertas Basuki Rahmat | Banyuwangi | 10,000 | 13,700 |
| Bekasi Teguh | Bekasi | 90,000 | 92,000 |
| Blabak | Magelang | 5,400 | 12,700 |
| Kertas Gowa | Gowa, S.Sulawesi | 15,000 | 24,200 |
| Kraft Aceh | Aceh | 165,000 | 135,000 |
| Kertas Leces | Probolinggo | 72,000 | 194,700 |
| Padalarang | Bandung | 6,000 | 10,900 |
| Lontar Papyrus | Aceh | 3,000 | 14,000 |
| Pakerin | Mojokerto | 145,000 | 160,000 |
| Total | | 1,304,800 | 962,200 |

Source: Association of Pulp and Paper (APKI) Report, 1995, p. 8

The role of the state is necessary in setting out public policy regarding credit for loans, allocation of land permission for pulp and paper factory construction and promoting private company shares in stock exchange markets, both domestic and international. This encouraged the pulp and paper industry to develop in the 1980s and until the year 2000. For example, in 1987 the total number of pulp and paper factories was 36, increasing rapidly to 41 in the 1990s. In the middle of the 1990s, this number increased again to 57. Of these factories, private companies dominated at 53 factories, with a production capacity of 2,508,000 tons of pulp/year, or 90.67 percent of total domestic production capacity. Of these, domestic private companies produced 1,498,400 tons annually, or 59.73 percent (PMDN).

Meanwhile, the remaining 1,010,000 tons/year, or 40.27 percent was produced by foreign private companies (PMA).

On the other hand, the state currently controls just four pulp and paper factories through State Firm Corporations (BUMN), with a total production capacity of 258,000 tons of pulp and 364,800 tons of paper annually. Of these, there are four companies: Kertas Kraft Aceh, with a production capacity for pulp of 165,000 tons and 135,000 tons of paper, Kertas Leces, producing 72,000 tons of pulp and 194,000 tons of paper, Kertas Padalarangan, producing 6,000 tons of pulp and 10,900 tons of paper and Kertas Gowa, with a production capacity of 15,000 tons of pulp and 24,200 tons of paper/year. The state also still controls 85 percent of shares of Kertas Kraft Aceh and 15 percent of the Pasopati group. Unfortunately, Kertas Gowa was recently evaluated by a public accountant as unhealthy, and the state is attempting to sell the company. The state has already sold Kertas Blabak and Kertas Basuki Rahmat for this same reason.

In 2001, the number of paper factories in Indonesia did not increase drastically, reaching a total of 43. However, production increased to 9,118,950 tons per year, compared to production in 1999 (6.3 million ton) and in 1990 (3 million ton/per year) (Table 8). From the total 9.1 million tons of paper produced, about 60 percent was made for the export market and 40 percent for domestic consumption. Private companies dominate share ownership at 40% foreign capital, 38% domestic private companies and 22% BUMN (State Firm Corporations). From what is mentioned above, it is indicated that the actor of *international financial institutions* have played a critical role in facilitating the rapid expansion of Indonesia's pulp and paper industries. Offshore investment banks have channeled much of the US\$12 billion invested in these industries through direct capital loans or by orchestrating bond offerings that tap into North American and European debt markets. For example, since 1994, the Sinar Mas Group (Indah Kiat Company) alone has raised over US\$13 billion for investments in pulp and paper projects in Indonesia and China through its holding company Asia Pulp & Paper. The Raja Garuda Mas Group (Riau Andalan Pulp and Paper Company) has, likewise, borrowed over US\$2 billion through Asia Pacific Resources International, Ltd. (APRIL) during the same period. The two groups have also obtained investment funds by offering equity shares in APP and APRIL on the New York Stock Exchange.⁶⁷ There are three dominant groups, producing more than 1 million tons of paper per year. Among the twenty largest companies, the Sinar Mas Group produces 2 million tons, Pindo Deli Pulp and Paper, 1.3 million tons and Kertas Tjiwi, 1 million tons. (Table 6.3).

⁶⁷ Barr, Christopher, "The Political-Economy of Fiber, Finance, and Debt in Indonesia's Pulp and Paper Industries," in *The Indonesian Quarterly*, Vol. XXIX No.2, 2001, p. 182.

Table 6.3 Largest Paper Producers and Capacities, 2001

| Name of Company | Mill Location | Production Capacity (Ton/Year) |
|---------------------------|------------------------|--------------------------------|
| Indah Kiat Pulp & Paper | Serang, Banten | 1,161,600 |
| | Perawang, Riau | 700,000 |
| | Tangerang, Banten | 120,000 |
| Pabrik Kertas Tjiwi Kimia | Mojokerto, East Java | 1,092,000 |
| Pindo Deli Pulp & Paper | Karawang, West Java | 1,303,000 |
| Pakerin | Mojokerto, East Java | 700,000 |
| Fajar Surya Wisesa | Bekasi, West Java | 500,000 |
| Aspex Kumbong | Cileungsi, West Java | 430,000 |
| Riau Andalan Kertas | Riau, Sumatra | 350,000 |
| Surabaya Agung | Gresik, East Java | 336,800 |
| Jaya Kertas | Nganjuk, East Java | 200,000 |
| Kertas Leces | Probolinggo | 180,000 |
| Pelita Cengkareng Paper | Tangerang, Banten | 157,000 |
| Papyrus Sakti | Bandung, West Java | 150,450 |
| Ayu Wangi/Eka Mas F | Malang, East Java | 150,000 |
| Surya Pamenang | Kediri, East Java | 150,000 |
| Kertas Bekasi Teguh | Bekasi, West Java | 150,000 |
| Suparma | Surabaya, East Java | 150,000 |
| Kertas Kraft Aceh | Lhoksumawe, Aceh | 125,000 |
| Surabaya Mekabox | Gresik, East Java | 85,200 |
| Lontar Papyrus | Aceh & Jambi | 67,500 |
| Kertas Blabak | Magelang, Central Java | 64,800 |

Source: Association of Pulp and Paper (APKI), 2001; See Data Consult Research, 2001.

Pulp factories in 2001 totaled 17, producing 5,933,100 tons per year (Table 6.4). Of these 17 factories, five are foreign-owned (PMA), five are State Firm Corporations (BUMN) and the remaining seven are domestic private companies (PMDN). There are two reasons why the pulp and paper industry has not increased rapidly: (1) the economic recession that occurred in Indonesia from mid-1997 until now and the subsequent lack of foreign and domestic investment and (2) the social and political instability in the transition period from the Soeharto regime to the reformation era (interview with APKI officer, July 6 2001). The reformation era is usually identified by campaigns to review environmental accountability and human rights issues, leading to stronger controls on investors to ensure sustainable

development, and therefore attempts to reduce, if not counter the deforestation of Indonesian forests.

Table 6.4 Producers of Pulp in Indonesia and their production capacity, 2001

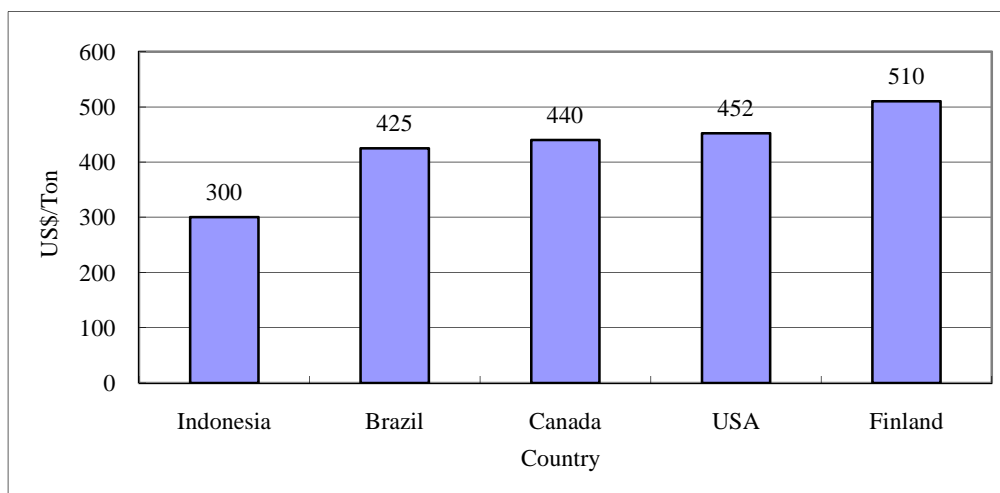
| Company | Location | Status | Start of Operations | Prod. Capacity (Ton/Year) |
|-----------------------------|-------------------|--------|---------------------|------------------------------|
| Long-Fiber Pulp: | | | | |
| Toba Pulp Lestari | Porsea, N.Sumatra | PMA | 1989 | 220,000 |
| Kertas Kraft Aceh | Aceh | BUMN | 1988 | 165,000 |
| Sub Total | | | | 385,000 |
| Short-Fiber Pulp: | | | | |
| Indah Kiat Pulp & Paper | Perawang, Riau | PMA | 1977 | 1,820,000 |
| Riau Andalan Pulp & Paper | Perawang, Riau | PMA | 1994 | 1,300,000 |
| Lontar Papyrus Pulp & Paper | Jambi | PMDN | 1994 | 545,000 |
| Kiani Kertas | E. Kalimantan | PMDN | 1997 | 525,500 |
| Tanjung Enim Lestari | S. Sumatra | PMA | 1998 | 450,000 |
| Wira Karya Sakti | Jambi | PMA | 1994 | 430,000 |
| Kertas Leces | E. Java | BUMN | 1939 | 129,000 |
| Pakerin | E. Java | PMDN | 1980 | 150,000 |
| Kertas Bekasi Teguh | W. Java | PMDN | 1978 | 90,000 |
| Pola Puprindo Mantap | Lampung | PMDN | 1996 | 20,000 |
| West Kalindo Pulp & Paper | W. Kalimantan | PMDN | 1993 | 39,600 |
| Kertas Basuki Rahmat | E. Java | BUMN | 1971 | 10,100 |
| Kertas Blabak | C. Java | BUMN | 1962 | 5,400 |
| Eureka Aba | E. Java | PMDN | 1978 | 30,500 |
| Kertas Padalarang | W. Java | BUMN | 1923 | 3,000 |
| Sub total | | | | 5,543,100 |
| Total | | | | 5,933,100 |

Source: Department of Industry and Trade, 2001; APKI, 2001; Data Consult Research, 2001.
 Abbreviation: PMA (Foreign Capital Investment);
 PMDN (Domestic Capital Investment); and BUMN (State Firm Corporation).

6.3. Comparative Advantages over Other Countries

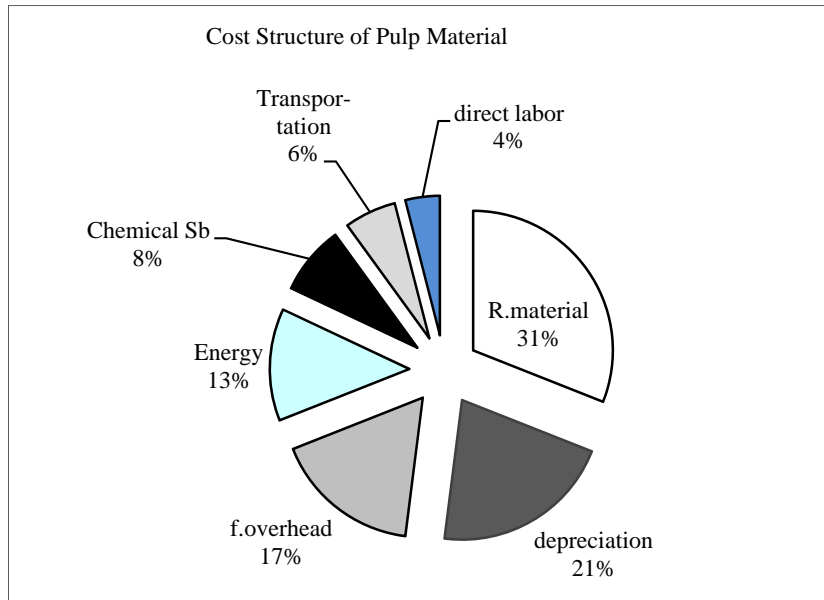
Why were paper factories in the 1990s located in the outer islands (*islands other than Java*)? There are two reasons for this. First, modern paper industries are giant projects; they require much raw material in the form of wood. This amount of wood is found only in the outer islands. It has recently become difficult to develop the pulp and paper industry in Java, because Java is highly populated; forests cover only 20% of total land, equivalent to 3 million hectares. Second, the raw materials for pulp, such as *eucalyptus*, *pinus* and *albizzia chinensis* plants are mostly located in the outer islands. The pulp and paper industry in Indonesia is ranked ninth and twelfth and is still open to further development. This is because of Indonesia's supporting factors and comparative advantage in terms of land coverage, surplus labor, raw material supply, the benefit of being closer to the Asian market (China, Japan, etc.), lower transportation costs and the ability of Indonesia to produce the appropriate climate for fast-growing trees such as *eucalyptus*. For example, for a *eucalyptus* to grow to 30 meters tall with a 30 cm trunk (*batang*), in Finland, with its cold climate requires 20 years, but in Indonesia, these same *eucalyptus* trees will be harvested within 7-8 years due to high rainfall and sufficient sunlight throughout the year. Therefore, if Finland requires 100,000 hectares of pine to provide for a pulp factory, Indonesia just needs 40,000 hectares of pine for the same factory. For example, in terms of pulp cost comparison with other major producers, Indonesia's relatively low cost of just US\$300/per ton, compares favorably with Brazil at US\$425/per ton, United States at US\$452/per ton, Canada at US\$440 and Finland at US\$ 510 per ton (Figure 6.5). The rationale behind the low cost of

Figure 6.5 Pulp Cost Comparison of Major Producers, 1996



Source: RISI, 1996, See Farid Harianto, et al., 1998, p. 39.

Figure 6.6 Cost Structure of BHK Pulp (Per Metric Ton)



Source: APP (Asia Pulp Paper), 2000.

pulp is due to the typical cost structure of BHK⁶⁸ production in Indonesia, such that raw material, capital, factory overhead, energy, transportation, direct labor are all still categorized as being in low price ranges. (Figure 6.6).

6.4. Raw Materials

The necessity for raw materials, such as from *HTI* (Industrial Timber Plantation), for the pulp and paper industries is significant. The government initially issued a policy obligating every pulp and paper company to plant around 200,000-300,000 hectares of *HTI*. These investments for *HTI* usually reach ten percent of capital for every factory and infrastructure, which could be worth US\$1.5 billion. Besides, the pulp and paper holders usually buy logging wastes, taken from tree branches about 10-15 cm in diameter. Further, pulp concession holders attempt to buy woodcuttings from *land clearing* such as from oil palm and transmigration project areas (Interview, July 6, 2001).⁶⁹ These *HTI* and other materials will produce short fibers (*serat pendek*) as raw material for the pulp industry. However, long fibers (*serat panjang*) are still imported from overseas. The Indonesian Pulp

⁶⁸ BHK Pulp means dissolving of pulp or decomposition in order to become liquid, especially by immersion in liquid.

⁶⁹ The interviewed was carried with Mohammad Mansur, Head of Presidium Pulp and Paper Association Indonesia, Cikini Jakarta on July 6, 2001.

and Paper Associations have not planted for long fibers because it is considered inefficient, yet the paper industry requires both short and long fibers. To illustrate, in 1993 pulp imports were 705,700 tons, with a production of 900,000 tons. Therefore, 123,600 tons were exported and domestic consumption from six pulp companies reached 1,482,100 tons, rapidly increasing in 1998 to 4.3 million tons of pulp production; 1.6 million tons were exported, while 839,510 tons were imported and domestic consumption reached 2.6 million tons (*Directory Indonesian Pulp & Paper, 1999*).

Actually, the government has issued HTI as plantation forestry besides reforestation in natural forest as raw material for providing timber supply to the forestry industries (plywood, sawmill, pulp and paper), which it is estimated consumed 30-40 million metric tons of timber in the 2000s (Table 6.5). The government has carried out the planting of 1.5 million ha of HTI in 1990/1991, from a target of 3.8 million ha. The role of private companies in HTI plantation is significant, and it should be mentioned, for example, that Marubeni (Japan) cooperated with Inhutani V and Barito Pacific built Musi Hutan Persada Company to plant 190,000 ha with Acacia in South Sumatra,⁷⁰ Surya Hutan (East Kalimantan) 125,000 ha, ITCI Hutani Manuggal (E. Kalimantan) 88,000 ha, Indah Kiat (Riau) 181,000 ha, and RAPP (Riau) 101,000 ha (see Table 6.6). Currently, under the spirit of the reformation era, the Department of Forestry has established five priority policies for the period of 2005-2009, one of which is the 'revitalization' of the forestry sector, especially the forestry industry. The strategy being implemented is the acceleration of plantation forest development to establish five million hectares. This target will be increased to a minimum of ten million hectares by 2014.⁷¹ In addition to securing raw material, it is expected that this strategy, according to a forestry officer, could address unemployment issues for local people.

Pulp is the raw material processed to create paper. This raw material is made from short fibers (*serat pendek*) derived from wood and non-wood products, such as sugar waste (*ampas tebu*), dried rice stalks (*jerami*) or rice straw (*merang*). Currently, the greater part of the pulp industry uses HTI materials such as eucalyptus, acacia and pines (*pohon pinus*). There are three kinds of pulp processing: (1) mechanical; (2) chemical; (3) and semi-chemical. The most popular process in Indonesia is chemical, followed by semi-chemical.

Technically, the supply of raw material from 200,000 ha of HTI must support each pulp industry (factory). For example, the harvesting of eucalyptus trees over a period of 8 years will produce 200 m³ of wood per hectare. Therefore, 25 m³ of wood is produced annually per hectare. If the area of an HTI is 200,000 hectares x 25 m³, then five million m³ of wood can be produced. This is roughly equivalent to one million tons of pulp. If, in 2000, the previously planted 1.5 million ha are harvested, an estimated 1.2 million ha x 25 m³ of wood

⁷⁰ Based on JOFF (Japan Overseas Plantation Center for Pulpwood), 2005, the area of HTI is about 190,000 ha, but according to Department of Forestry, 2000, and Data Consult Research Paper, 2000, the area explicitly mentioned was about 205,000 ha (in realization), from a former land reserved area of 296,000 ha.

⁷¹ See, Statement Minister of Forestry, Republic of Indonesia (H.M.S. Kaban) to the Stakeholders Update for 2006 in terms of SINARMAS Forestry's commitment.

= 6.6 million tons of pulp will be sold. This means that the required pulp production of 5.2 million tons in 2000 will be fulfilled (*Interview, July 6, 2001*). Although Indonesia will produce 2-3 percent (5.2 million tons of pulp) of total world pulp production in the year 2000, according to Mansur we are optimistic that in the coming decade the production of pulp industry will be developed.

6.5. The Role of Government

6.5.1. Investment

The government has attempted to encourage domestic and foreign investors. Various facilities have been provided to facilitate investment in projects. For instance, the government issued a simplification of permission procedures, trade regulations, banking facilities, allocation of land for HTI plantations and reforestation policies. However, many companies are using reforestation funds and among them are companies also using their own funds for HTI plantation (Table 6.7).

Table 6.5 Annual Pulp Production and Roundwood Consumption of Indonesia's Pulp Industry 1988-1998, with projections to 2000, 2005, 2010

| Year | Pulp Production (000 tpa) | Roundwood Consumption (000 m3) |
|------|---------------------------|--------------------------------|
| 1988 | 368 | 1,805 |
| 1989 | 461 | 2,261 |
| 1990 | 697 | 3,415 |
| 1991 | 850 | 4,165 |
| 1992 | 870 | 4,263 |
| 1993 | 900 | 4,410 |
| 1994 | 1,314 | 6,439 |
| 1995 | 2,022 | 9,908 |
| 1996 | 2,561 | 12,549 |
| 1997 | 3,048 | 14,984 |
| 1998 | 3,430 | 16,807 |
| 1999 | 3,400 | 16,660 |
| 2000 | 4,140 | 20,286 |
| 2005 | 5,790 | 28,945 |
| 2010 | 6,715 | 33,605 |

Source: Indonesian Pulp and Paper Association (APKI) for 1988-2000; Jaakko Poyry (1998) for 2005-2010 Projections.

Table 6.6 Realization of Pulp HTI projects, June 2000 (ha)

| Company | Location | Area of Land Reserved | Realization |
|--|-----------------|------------------------------|--------------------|
| Using reforestation funds: | | | |
| Alas Helau | Aceh | 96,899 | 24,630 |
| Musi Hutan Persada | S. Sumatra | 296,000 | 205,084 |
| Surya Hutan Jaya | E. Kalimantan | 183,300 | 125,642 |
| Tanjung Redep | E. Kalimantan | 180,330 | 77,342 |
| Finantara Intiga | W. Kalimantan | 299,700 | 33,268 |
| Acindo Foresta | E. Kalimantan | 201,821 | 29,016 |
| ITCI Hutani Manunggal | E. Kalimantan | 161,127 | 88,181 |
| Indonusa Indrapuri | Aceh | 111,000 | 30,600 |
| Menara Hutan Buana | S. Kalimantan | 268,585 | 113,952 |
| Non-Use of Reforestation Funds: | | | |
| Toba Pulp Lestari | N. Sumatra | 269,060 | 49,117 |
| Indah Kiat | Riau | 299,975 | 181,313 |
| Wira Karya Sakti | Jambi | 172,978 | 84,703 |
| Riau Andalan Pulp and Paper | Riau | 159,500 | 101,327 |
| Total | | 2,700,675 | 1,114,175 |

Source: Department of Forestry, 2000; See Data Consult Research Paper 2000.

The government trade regulation policy on import tariffs for pulp and paper products has been continuously reduced, from 25-30% in 1994 to 15-20% in 1995 and 0-10% in 1996. From January 1996 the remaining import duties have been lowered to 10% for 38 types of industrial papers and to 0% for pulp of any kind. Obviously, such a tariff reduction is ahead of the existing AFTA scheme to lower tariffs among ASEAN member countries to no more than 5% within the next 15 years on a broad range of pulp and paper products.

The government is actively involved in supporting the development of the pulp and paper industry in order to obtain added value of forest products and foreign revenues. The government's policies on wood supply, namely by issuing HPH (logging forest concessions), HTI (industrial timber plantations) and transportation facilities are aimed at supporting the development of the pulp and paper industry in order to meet the rising demand for paper, both for domestic and export markets.

The government protects local paper procedures, such as through an import duty applied to paper already produced locally at a level of 30-40%.⁷² This regulation was beneficial for companies that were able to launch products of equal quality to imported

⁷² For further information, see *The Pulp and Paper Industry in Indonesia: It's current State and Prospects*, Jakarta, Data Consult, November, 1990, pp. 132-136.

products. The government has also provided tax exemptions in accordance with prevailing regulations. On the other hand, the role of BKPM (the Board for the Coordination of Capital Investment) gives priority to investors who wish to join the pulp and paper industry and excludes investors who appeared inefficient.

The pulp and paper industry is still open for new investments under PMDN (Domestic Capital Investment) and PMA (Foreign Capital Investment), except for laminated kraft paper for cement sacks, which has been deemed closed for all types of investments. Valuable paper production has also been restricted to companies under PMDN status from selected BUMN groups such as the Padalarang and Kertas Leces Companies. Meanwhile, supply areas for raw materials have been chosen outside Java, such as Riau, East Kalimantan, Central Kalimantan, South Kalimantan and other potential areas. The government's policy to restrict new investments in the production of cement sack paper is aimed at protecting companies already in operation, such as Kertas Kraft Company in Lhoksumawe, Aceh and Kertas Kraft Cilacap.

6.5.2. Regulation for PMA Investments

The government has paid much attention to PMA, as reflected in the following provisions:

- a. PMA companies that obtained government's approvals under law no. 1/1967 are given a 30 years' period of investment from the date of establishment of the legal business.
- b. PMA companies that have committed investments according to the government's approval can apply for a permit to expand.
- c. PMA companies are required to be in the form of joint ventures and a minimum of 20% of the companies' shares is to be national capital at the time of establishment and it is to increase to 51 percent within 15 years from the commencement of commercial production.
- d. PMA companies are entitled to the same facilities as PMDN companies if the government owns 51 percent of the shares, or national private companies, on condition that 20 percent of the total shares are sold through the stock exchange market as shares "on behalf" of public share.
- e. The pulp and paper industry has now attracted PMA investors, as Indonesia's conditions are considered competitive, particularly for export purposes.

6.5.3. Facilities for Investment

Fiscal facilities provided to PMA/PMDN companies introduced in law no.7 of 1983 regarding Value-Added Tax for Goods and Services and Sales Tax for Luxurious Goods and

law no. 13 of 1985 concerning Stamp Duty for Fiscal Facilities are as follows:

- a. Reduction of/exemption from import duty for machines and spare parts, except for specified types already produced locally.
- b. Exemption from import duty for raw materials/supporting materials for a two- year period of production.
- c. Exemption from Change of Name Duty for the first ship registration act applied in Indonesia.
- d. Exemption from income tax for importers of capital goods and raw materials for a one-year period for new companies on condition that the company is not under obligation to pay income tax.

CHAPTER VII

THE ROLE OF PRIVATE COMPANIES (CASE STUDIES OF APP AND APRIL)

Introduction

This paper discusses the role of the private sector in carrying out pulp and paper industrialization in Indonesia. In fact, there are actors which are state firms and private firms establishing pulp and paper companies in Indonesia. There are private companies such as Tanjung Enim Lestari (Pulp), Kiani Kertas (Pulp), Kertas Bekasi, Teguh (Paper), Pelita Cengkareng Paper (Paper), and so on. On the other hand, for state firms there are Kertas Leces (Paper), Kertas Kraft Aceh, Kertas Blabak (Paper), Padalarang (Paper) etc. These companies mentioned above are categorized as small players, compared with APP and APRIL, which have become the dominant players in Asia (excluding Japan) and who are attempting to be major world players. This case study focuses on the two biggest actors namely Sinar Mas Group's Asia Pulp and Paper (APP) and Radja Garuda Mas Group's (Asia Pacific Resources International (APRIL)).

7.1. APP (Asia Pulp and Paper)

The Sinar Mas Group is one of Indonesia's ten largest business groups, owned by Eka Tjipta Wijaya family (Chinese name: Oey Ek Tjhong). Annual group sales are Rp.20.2 trillion (US\$8.5 billion), with 200 affiliated companies.⁷³ In 2007, this company has recovered after the financial crisis of 1997 and the group's total assets are now estimated at US\$12 billion or around Rp.108 trillion.⁷⁴ This group, which was established the early 1970s concentrates its main business on pulp and paper, agribusiness, property and financial. This paper focuses on pulp and paper, specifically on the familiarly so-called APP (*Asia Pulp and Paper*), of which Sinar Mas Group owns about 65% of the shares. APP is a holding company for the Group's pulp and paper operations in Asia.

It initially launched a strategic vision, that APP would become the 21st century's number one international standard pulp and paper manufacturer, dedicated to providing superior value to customers, shareholders, employees and the community. Currently, the main operating companies are located in Indonesia (the biggest), China (second), India, USA,

⁷³ The Sinar Mas Group is categorized as the second biggest business in Indonesia after Salim Group, annual sales Rp.53.1 trillion (US\$ 22.3 billion), owned by Soedono Salim (Liem Sioe Liong). See Yuri Sato, "Post-Crisis Economic Reform in Indonesia: Policy for Intervening in Ownership in Historical Perspective," in *IDE Research Paper* No. 4, September 2003; See also *Warta Ekonomi*, No.9 (27), Nov 24, 1997; CISI Raya Utama (1990).

⁷⁴ According to Sinar Mas Group Managing Director Gandi Sulistiyanto, *Tempo English Edition*, January 9-15, 2007.

Malaysia, and Japan (a marketing branch) (Figure 7). Meanwhile, the main office of APP is located in Singapore. It aims to be easy to obtain ‘foreign revenues’ and ‘market’ by selling equity shares in international stock exchanges such as New York to expand fresh capital.⁷⁵ This decision by APP officers, was praised by George Soros who commented: “It is more difficult to preserve capital at the periphery (Jakarta or Singapore), than at the center (New York), and capitalists in peripheral countries tend to accumulate capital abroad. At times the reverse flow exceeds the outward movement. The disparities are cumulative, and the disadvantages occurring to peripheral countries resulting from membership in the global capitalist system may sometimes exceed the benefits.”⁷⁶

The rationale for APP establishing some manufactures overseas for instance in expanding markets in China, India, USA, and Japan (for marketing), stems from two reasons. First, is to take advantage of low wage rates (more generally low factor prices) and have a large market in the host country, especially in China and India. On the other hand, the per capita paper and paperboard consumption of China in 1989 reached 12 kg, 17 kg in 1993 and rapidly increased to become 41.6 kg in 2004, and also India rose from 3 kg in 1993 to become 28.6 kg in 2004. Second, is to encourage access to the markets of host countries for instance in Japan and USA. For example, APP exports paper products to Japan (as a competitive market, priced at US\$900 per ton in 2000s) reached 300,000 metric tons in 2001, increased to become 500,000 mt in 2003, and slightly decreased into 430,000 mt in 2005, with total foreign revenues reaching US\$450 million in 2003 and 387 million in 2005.⁷⁷ Unfortunately, it was eventually decided that the manufacture which was located in India and Malaysia be cancelled in 2003, after serious discussions on recovering foreign debt restructuring and a new business management efficiency.⁷⁸

7.1.1. Development of APP

Currently under the flag of APP, the combined manufactures in Indonesia reached a production of about 4.4 million tons of paper and 2.3 million tons of pulp in 2001⁷⁹, and this has slightly increased to become 4.6 million tons in 2005 (Figure 7.1). This figure, shows that APP itself contributed almost 60 percent to the total Indonesian paper production of 7.6 million tons in 2004.

Sinar Mas’ Pulp and Paper business was initially established by Tjiwi Kimia in

⁷⁵ This information regarding the choice of Singapore as base for the head office of APP rather than Jakarta, the rationale being in order to obtain more financial fund and market, is from an interview with an APPJ (Asia Pulp and Paper of Japan) officer held, on December 22, 2006.

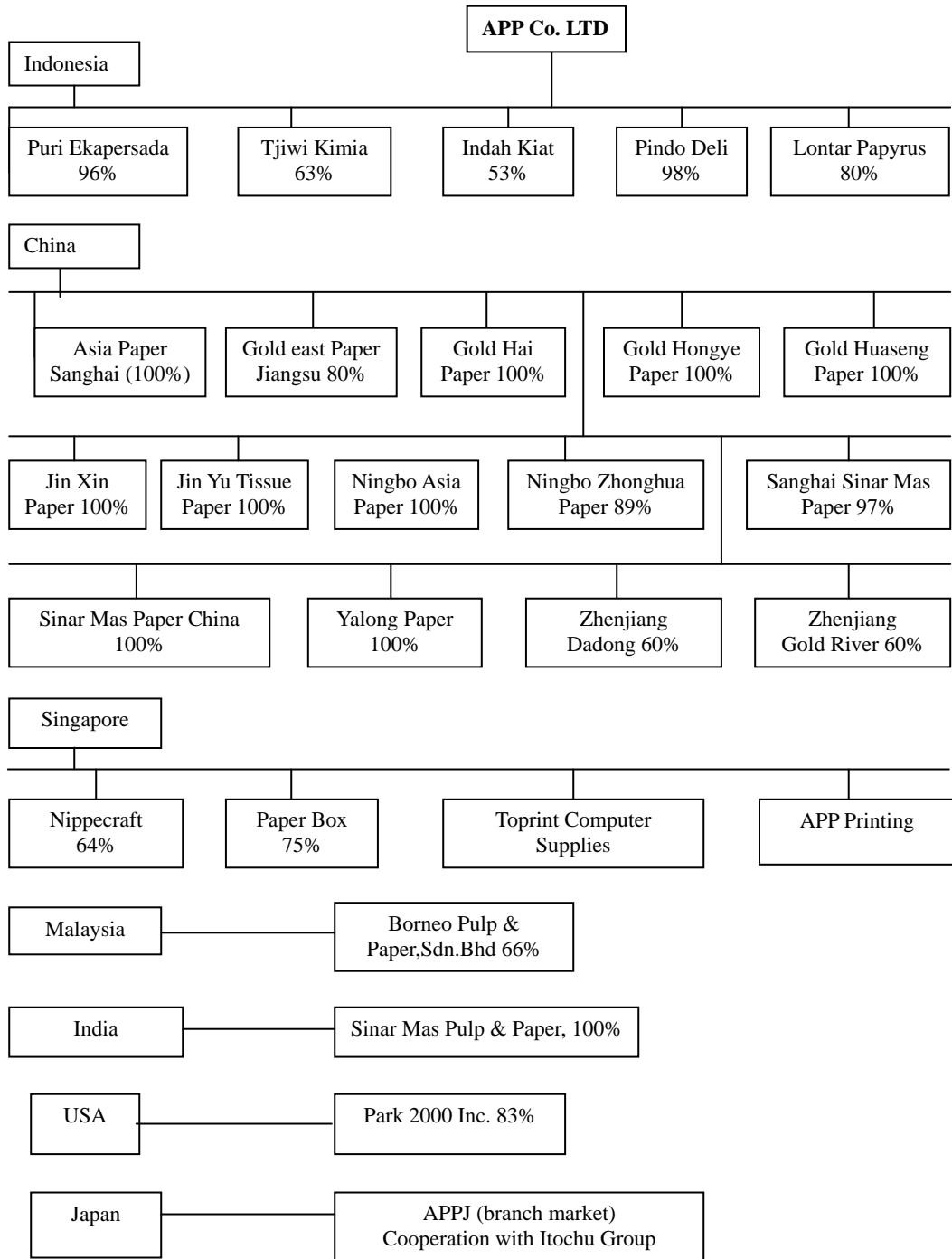
⁷⁶ George Soros, *Open Society: Reforming Global Capitalism*, New York: Public Affairs, 2000, p. 169.

⁷⁷ Interview with Vice-President of APPJ, in Tokyo, December 6, 2006.

⁷⁸ Interview with APPJ Officer in Tokyo, January 10, 2007.

⁷⁹ APKI (Association of Pulp and Paper), 2001. Interview with APPJ officer in Tokyo, January 11, 2007.

Figure 7.1 APP's Pulp and Paper Manufacturers Overseas



Source: See Yuri Sato, *Corporate Governance in Indonesia: A Study on Governance Business Group*, 2000, p. 105.

Modjokerto, East Java. This paper company had a production capacity of 12,000 metric tons in 1978, and this rapidly increased to 200,000 mt in 1991, and became 1,092,000 mt in 2001. In 1985 Sinar Mas made an acquisition of a 33% share in Indah Kiat and increased this share to become 67% in 1989. Indah Kiat's Paper mill initially produced about 54,000 tons of printing and writing paper. In 1990, a second pulp mill (180,000 tpa) was established and rapidly increased production to become 1.8 million tons in 2001, and a second paper machine was established with support from the Jaakko Porry Group of consulting engineering, contracting, and manufacturing companies from Finland at Indah Kiat's Pulp and Paper near Perawang, Riau.⁸⁰ Its production rapidly increased to become 700,000 tons of paper in 2001 and Lontar Papyrus in Jambi produced 545,000 tons of pulp. In 1994 the Group's BHK pulp production capacity increased with the completion of two pulp mills (410,000 tpa each with a total investment of US\$1,020.9 million, in Indah Kiat Perawang Pulp Mill and Lontar Papyrus Jambi Pulp Mill. To obtain fresh capital, Indah Kiat and Tjiwi Kimia raised US\$500 million and US\$200 million, respectively in the US and on international bond markets. In 1995 APP raised approximately US\$300 million through listing of its ADSs on NYSE. On the other hand, APP Finance raised US\$550 million in the US and on international bond markets.

Again, Sinar Mas acquired Pindo Deli in 1992, one of the largest producers of printing and writing paper and tissue paper in Indonesia. Eventually Pindo Deli became the largest producer reaching 1.3 million tons in 2001. The company launched a strategy to expand production by establishing Indah Kiat factory in Serang in 1993. It produced 300,000 tpa of container board and corrugated shipping containers and this rapidly increased to become 1.2 million tons in 2001.

In the same year, this company acquired two companies, namely Zhenjiang Dadong and Zhengjiang Gold River in eastern China (60,000 tpa), and also formed Sinar Mas India, with plans to establish a 100,000 tpa paper mill near Bombay.

In 1996 APP Finance entered into a joint venture arrangement with STIDS of Malaysia to have controlling interest in a new BHK Pulp Mill in Borneo, Malaysia with an annual capacity of 750,000 tons and 370,000 ha of concessionaire forestry land. In this case, APP raised about US\$1.0 billion through APP Finance.⁸¹

⁸⁰ In the late 1980s and 1990s, Finnish and Swedish forest industry technology firms exported major amounts of capital goods, government grants, loans and credit to the Southeast Asia region (Indonesia, Thailand, Malaysia, Philippines) to establish pulp and paper manufactures. For further information, see David A.Sonnenfeld, "Viking and Tigers: Finland, Sweden, and adoption of Environmental Technologies in Southeast Asia's Pulp and Paper Industries," in *Journal of World Systems Research*, Vol. 5, No. 1 (Spring 1999), p. 8.

⁸¹ Yuri Sato (ed.). *Op Cit*, pp. 47-48.

7.1.2. Wood Raw Material

It is very necessary to provide wood raw materials for a sustainable APP manufacture in Indonesia and other countries. In this matter, Sinarmas Forestry, one of the key players in the forestry industry, has been conducting plantation forest development activities since 1983. To date, Sinarmas Forestry, in collaboration with other stakeholders (such as Arara Abadi Company and local people), has shown its strong commitment to developing the forest resources for the benefit of the nation.⁸² The estimation of consumption by the Forestry Department reached 10 million m³ per year (Barr (2000) estimates it at over 11 million m³) for the forestry industries in Riau. These industries include the two largest pulp and paper mills (Indah Kiat and RAPP), 15 plywood factories, three chip mills, 27 molding factories and 345 legal sawmills (Dinas Kehutanan, Riau 2001).⁸³ There are many timber resources for forestry industrial demand supply, namely: (1) from production forest, HPH contributes 1.1 million m³ per year; (2) by purchasing small licenses (Izin Pemanfaatan Kayu/IPK) from private customary rights forest (e.g., Hutan Adat about 100 ha, available every IPK), (3) industrial timber plantation (HTI), and so on. Thus, the total production of timber available legally was calculated to be 6-7 million m³, leaving a shortfall of about 10 million m³. This huge deficit is to be met from illegal logging sources. In the case of illegal logging activities, at present both pulp and paper companies IKPP and RAPP have been accused of being actively involved by some NGOs such as Walhi and WWF. This impeachment has been argued by an APP officer, stating that no illegal logs have become available from this illegal logging. The officer said that the company is committed to maintaining sustainable forest management by planting HTI.⁸⁴

How does APP provide raw material? There are many ways to provide it, namely: (1) Recycled fiber by import, 35%; (2) Renewable wood residues, 31%; (3) Sustainable Plantation Fiber, 21%, and (4) Certified Purchased Pulp, 13%. In the case of plantation fiber, APP planted 632,500 hectares by June 2006. The annual planting target is 230,000 ha. The target in 2010 reaches 1.2 million ha. It has been shown that there are HTI areas in many provinces, such as in Riau (387,000 ha), Jambi (229,000 ha), South Sumatra (478, 000 ha), West Kalimantan (103, 000 ha), and East Kalimantan (95,000 ha). This HTI is provided by Arara Abadi Company, which planted 300,000 ha since the 1980s in Riau Province (Table 7.1), which in the long run has submitted its pulpwood production supply to Indah Kiat's fiber needs. At the end of the 1990s, Arara Abadi obtained its first substantial harvests from

⁸² This statement by the Minister of Forestry of the Republic of Indonesia was issued following a "Sustainability Seminar", which was held in Tokyo, Japan on November 14, 2006. The seminar was attended by dozens of Japan-based large paper buyers and retailers featured a multi-stakeholder dialog on the revitalization of the forestry sector to secure the sustainable source of raw material for pulp and paper industry in Indonesia.

⁸³ See Lesley Potter and Simon Bad, *The Effect of Indonesia's Decentralization on Forests and Estate Crops: Case Study of Riau Province, the Original Districts of Kampar and Indagiri Hulu* (CIFOR Report), 2001, pp. 10-13.

⁸⁴ See, Sustainability seminar paper by APP-Sinar Mas Pulp & Paper Products held on November 14, 2006 in Tokyo for APPJ buyers and retailers.

Table 7.1 Planned and Actual HTI Plantings, IKPP (Arara Abadi), to January 2000)

| Company/Year | Planned Planting | Actual Planting |
|------------------|------------------|------------------|
| Arara Abadi IKPP | | |
| 83/84-90/91 | 25,100 | 30,959 |
| 91/92 | 11,500 | 17,113 |
| 92/93 | 46,516 | 13,468 |
| 93/94 | 18,500 | 16,747 |
| 94/95 | 25,257 | 16,178 |
| 95/96 | 22,038 | 15,489 |
| 96/97 | 27,269 | 18,646 |
| 97/98 | 30,225 | 21,613 |
| 98/99 | 29,815 | 14,993 |
| 99/2000 | 60,045 | 15,809 |
| Total | 296,283 | 181,009 (61.1%). |

Source: Dinas Kehutanan (Forestry Agency, Riau Province, 2000).

Fiscal year annually starts from April 1 to March 31.

the plantation, harvesting 390,000 m³ in 1998, 900,000 m³ in 1999, 1.3 million m³ in 2000, rapidly increasing to become 4.4 million m³ in 2005. The *Acacia* wood harvested by Arara Abadi in 1999 accounted for 20 percent of the fiber consumed by Indah Kiat that year.⁸⁵ Thus, the GK Goh study from Singapore points out that with a net plantable area of 217,000 ha, Arara Abadi can plant at most 27,125 ha if it manages the site on an 8-year rotation. This would not fully meet Indah Kiat's fiber needs on a sustainable basis. In facing such substantial fiber shortfalls from Arara Abadi's plantation, Indah Kiat has increasingly few options for filling the deficit with cheap supplies of mixed tropical hardwoods.

7.1.3. Research and Development

It is significant for APP that it has a supporting program in the Research and Development (R&D) division. APP as a new player in the pulp and paper industry should pay attention to the development of R&D. This R&D division must be staffed by qualified human resources, given practical training in coordination, and innovative technology in

⁸⁵ See Christopher Barr, "Profits on Paper: The Political-Economy of Fiber, Finance, and Debt in Indonesia's Pulp and Paper Industries", this paper published by CIFOR and WWF, Nov 30, 2000, pp. 15-16.

order be able to diversify her products, and geographical markets.⁸⁶ The analysis focuses on three elements. First, APP launched a strategy in 2005 for innovative technology by buying new machine equipment from Finland (Metso) and Germany (Foid) of a larger size, size 9. The previous machine, a Mitsubishi imported from Japan, had a size of paper products of 6.7. Training for Indah Kiat (Perawang)'s staff engineers for operation of the new machine was carried out by Finnish and German engineers over three months. Actually, in mastering paper technology in terms of machines, APP has made the same progress as paper companies in Japan such as Oji and Nippon, because Japan also imports new machines from Finland and Germany.⁸⁷ Second, new high-precision machines for paper are able to produce a diversification of paper such as several grades of paper (newsprint, printing and writing paper, packaging, coated paper, PPC Paper, sanitary tissue, containerboard, linerboard, boxboard, whiteboard), and so on. Third, it is necessary to export 65 percent of these products to overseas markets, because only 35 percent is provided to the domestic market. The total products of APP in Indonesian factories reached 4.5 million metric tons in 2001 and slightly increased to become 4.7 million in 2005. This amount reached almost 60 percent of a total of 7.6 million tons of Indonesia's paper products in 2004. In this case, APP has aggressively opened representative offices in emerging markets, especially in Asia and others such as in United States and European market. For example, APP made a joint venture, totaling about Y135 million in 1997 with the Itochu Group. In the initial stage, APP contributed a 51 percent share and Itochu 49 percent. Later, in 2001, the proportion of the shares was changed to become respectively a 50 percent share for each company to establish APPJ (*Asia Pulp Paper Japan*). This APPJ, as a representative marketing branch in Tokyo and Osaka, with more than 60 employees, aims to sell paper products in Japan. The agent of APPJ in Japan such as Japan Pulp and Paper, Kokusai, Sinsei, Marubeni and Itochu Pulp and Paper actively engage in promotion and marketing of these paper products. In 1995, Japan, China, South Korea, Hong Kong, Taiwan, and Singapore, and so on accounted for a significant portion (82%) of paper and packaging consumption in Asia. On the other hand, in terms of products, printing and writing paper accounted for approximately 30 percent, while packaging rose to 38 percent of the total volume consumed in Asia.

The APP Company in terms of paper grades products is still limited, if compared with Japan's paper manufacturers. However, from the viewpoint of quantity of products this company could be categorized as innovative. For example, packaging, printing and writing paper, newsprint, and tissue are categorized as paper products considered to show more progress in the future. In Indonesia, demand for paper and packaging products in the 2000s has relatively increased because of economic growth. In 1986-1996, worldwide consumption of paper and packaging products had an average annual growth rate of about 3.3 percent,

⁸⁶ Interview with APPJ Officer in Tokyo, Dec 8, 2006.

⁸⁷ *Ibid*, January 10, 2006.

exceeding the worldwide GDP annual growth of 2.5 percent.

7.1.4. *Professional Management*

Initially, it appears this company was dominated by family business management. Since the 1990s, while Sinar Mas Group sold bonds and shares on international stock exchange markets in Singapore and New York, this eventually become more open. The Group decided to subsidize Indah Kiat and Tjiwi Kimia Company to go public in 1994. APP itself, through its ADSs (*American Depository Securities*) on the New York Stock Exchange, put the companies under public scrutiny and provided checks to the discretionary behavior of controlling shareholders in 1995. Thus, since 1994, the Group has aggressively entered the U.S. and other international bond markets. By 1997, it had about US\$5.7 billion debts on top of its consolidated equity of about US\$4.3 billion. Nevertheless, the structuring of foreign debts after the Indonesian economic crisis of 1997 appears to have been fruitful in 2003.

From this phenomenon, the current profile of APP significantly appears to be professional management, which is characterized by corporate business ethics, namely accountability and transparency. This consequence appears from recruiting professional managers from many countries in Asia, Europe, and from the United States, and so on.⁸⁸ Within the APP group, for example, just one person, Teguh Ganda Wijaya, the eldest son of Eka Wijaya, works as a top executive manager among eight members. The rest are professional, including expatriates. At all strategic positions of the company, expatriates are hired to work at facilities together with locals. Promotion from within is also augmented by hiring professionals with tight selectivity.

7.1.5. *Community Development*

Actually, the concept of CSR (*Corporate Social Responsibility*) is similar to “Community Development” (CD) that has been widely practiced by big companies such as logging companies/HPH, mining, and so on in Indonesia. In the 1980s-1990s this concept of CSR or CD appeared in public and attracted many stakeholders such as NGOs, academics, and even private business actors to support the affirmative program on empowering the socio-economic community.⁸⁹ Based on a global survey by the Economist Intelligence Unit, 85 percent of senior executives and investors from many fields have adopted CSR/CD as primary consideration in decision making. The result of the survey clearly showed that the CSR concept has not just appeared as a significant issue, but has actually become a strategic business element of respected companies.

⁸⁸ Interview with APPJ managers in Tokyo, on January 10, 2007. Yuri Sato’s discussion on APP’s management Profile, on December 26, 2006 in IDE.

⁸⁹ See *Warta Ekonomi*, No. 25, Tahun XVIII, December 11, 2006.

Thus, in the Asian region, the appearance of CSR/CD as a current trend is based on two rationales. First, the socio-economic condition of Asia, especially Indonesia, still appears to be backward and poor. In this context APP, as part of a corporate holding under the Sinar Mas Group, has a social responsibility to strengthen the quality of community and social cohesion in pluralism. Second, the pluralism that covers Asia, and especially Indonesia, is very unique, and the emergence of CSR/CD to maintain and protect the sustainable ecosystem is crucial. In this matter, APP cooperates with the Sinarmas Forestry Program and local people on developing various “community forest” and “community empowerment” programs related to education, forestry preservation, infrastructure development, and so on. This total program has within two years spent US\$3.2 million on Riau and Jambi, for example, for the forestry program in Jambi in 2005-2006 (Table 7). On the other hand, social activities, namely education and advocating of economic activities among local people in Jambi (Table 8) and similar activities in Riau have also been carried out (Table 9).

The main purpose is to encourage local people from the viewpoint of participation, creativity and productivity to empower them to take a significant role in promotion of their own socio-economic power. This condition is enhanced by facilitating private companies, one of which is the APP Company, and inherently stimulate local people to work together. However, the most important element of the CSR or CD program, which has been carried out by the APP Group, has relevance with the core business, namely, forest plantation (HTI), partnership with local people, labor supply, to support environmental conservation, sustainable forest management, education and socio-economic empowering, and so on.

Table 7.2 Forestry Program in Jambi 2005-2006

| No | Program | Achievement | No. of Persons Involved |
|----|--|----------------------------------|-------------------------------------|
| 1. | Community Forest: Hutan Rakyat Program Kemitraan -Community Forest on Partnership Program); -Plantation Forestry on Partnership Program | 16,218 ha planted trees | 9,745 families |
| 2. | Community Forest Cooperative | Production: 509,084, 28 tones | 114 cooperative |
| 3. | University Collaborative in Community | 23 ha planted | - |
| 4. | School Construction/Renovation | 28 schools built | 399 teachers and 15,365 students |
| 5. | Training for Farmer | 9 villages | 50 people |
| 6. | Village Infrastructure | 65 units | - |

Source: APP, Sinar Mas Group Program 2005-2006, pp. 47-49.

Table 7.3 Education and Economic Program 2005-2006

| No. | Program | Achievement | No. of Persons Involved |
|-----|------------------------------------|------------------|-------------------------|
| 1. | Scholarship | | |
| | Primary Secondary School (3 years) | Rp.360,000,000 | 500 people |
| | University (1 year) | Rp.50,000,000 | 50 people |
| 2. | Fresh Water Fish Farming | Rp.265,766,310 | 130 families |
| 3. | Seedling Production | 22,305,996 stems | 250 families |
| | | Revenue: | |
| | | Rp.1,762,173,684 | |

Source: *Ibid.*

Table 7.4 Forestry Program in Riau Region 2005-2006

| No | Forestry Program, Education | Achievement | No. of Persons Involved |
|----|--|-------------------------------|-------------------------------|
| 1. | Forest Partnership | 48,823 ha planted | 3,500 people |
| 2. | Community Forest Cooperatives | Revenue: Rp.27,600,000,000 | 4,378 people |
| 3. | University Collaboration in Community | Rp.50 planted | 200 trained students |
| 4. | School Construction | 28 schools (participation) | 367 teachers; 12,738 students |
| 5. | Community Training | Multi Disciplines | 820 people |
| 6. | Labor Supply | 7 operational districts | 1,148 people |
| 7. | Village Infrastructure | 65 projects (participation) | - |

Source: *Ibid.*

7.2. APRIL

7.2.1. Development of APRIL

Raja Garuda Mas (RGM) Group is categorized as one of the ten largest businesses in Indonesia, established in 1972 by (Tan Kang Hoo), a Chinese businessman. He was born in Belawan, North Sumatra. The assets of RGM total about US\$ 8 billion, and the company is supported by 56,000 workers. Sukanto Tanoto's personal wealth is said to have reached US\$2.8 billion. He has been declared by Forbes Asia magazine in 2006 to be one of the richest men in Indonesia. His company operates in three world block areas Asia, Europe and

Latin America (Brazil).⁹⁰ However, his emporium was stagnant during the economic crisis in Indonesia in 1997/1998. Because of the Rupiah devaluation against the US dollar, he suffered a debt of Rp.2.1trillion to BPPN (*National Bank Recovery Agency*). Currently, his business also has to pay credit to the national consortium of banks, the largest to Mandiri and BNI bank, about US\$1.5 billion. This is based on a two-party agreement (RGM and bank consortium), and the company's credit expires in November 2016, annual payments reaching US\$140 million (*Kompas*, November 1, 2006). Nevertheless, this company has an optimistic future in that all these debts will be paid, according to Tjandra Putra, Vice President of Finance of the RGM Group, because the world's pulp price has rapidly increased to US\$900 per ton.

His group's main business is in plywood (Karya Pelita), logistics (Forindo Pte), property (Bina Sarana Papan), for which the so-called Anugerah Group acts as the holding company in plywood, property and banking. In agribusiness (Indosawit Subur, Asian Agri), he established the Agri Group with 19 factory mills. Further, there are companies for mining and gas (Pacific Oil and Gas), Sateri (for pulp in Brazil and China), and the Pec-Tech group for infrastructure oil and gas. Another company, Inti Indorayon Utama (IIU) in the pulp industry is located in Porsea sub-district, North Sumatra (Figure 7.2). The investment for IIU Company totaled US\$213 million in the 1980s. The IIU became a national issue because it was implicated in the Asahan River pollution in 1994, and was subsequently closed by the government in 1998.⁹¹ The RGM Group established APRIL (*Asia Pacific Resources International*) in 1994, as a holding company for pulp and paper companies. Thus, APRIL as a holding company is the second largest pulp producer after APP, producing annually 2 million tons, the head office being based in Singapore. It manages equity interests in Inti Indorayon Utama, Riau Pulp and Riau Paper in Indonesia. In 1990, Inti Indorayon Utama offered public shares. RGM hired Jaako Poyry from Finland to conduct a feasibility study and act as design consultant for the mill factory. RAPP in Pangkalan Kerinci, Perawang, Riau was eventually established in 1994 with a total budget of US\$750 million from many contributing companies including Finland's Kone, Valmer, Ahlsstrom, Sund Defibrator, Sunds Rauma and Outtukuppu; Sweden's Noss and ABB Flakt; Japan's Mitsubishi Heavy Industries and Nippon Sanso; Canada's Chemestics and Bailey; the US's Cranston and Solarturbines; Germany's Siemens; Britain's ICI; Brazil's Voith; Taiwan's Teco, and India's Ion Exchange.⁹² The mill's needs of approximately 4,750 cubic meters of water per hour will be supplied by the nearby Kampar River. According to the company executive officer, the mill, which will require the establishment of a port and 45 km of railway for

⁹⁰ See *Tempo*, Edition 15-21 January, 2007, pp. 106-107.

⁹¹ Inti Indorayon Utama (IIU) was closed in 1998, in the Habibie Administration, because of water pollution in Asahan River. The company lost foreign revenues reaching US\$600 million up until 2003. The company eventually opened again in 2003 in the Megawati administration, after an international jury and the government carried out an audit.

⁹² See Larry Lohmann, "Freedom to Plant: Indonesian and Thailand in Globalizing Pulp and Paper Industry," in Michael Parnwell & Raymond L. Bryant (ed.), *Environmental Change in South-East Asia*, London: Routledge Press, 1996, p. 29.

transportation of wood and wood products, will employ at least 1,000 people, US\$750,000 of capital investment per mill job. In APRIL's 1999 Annual Report, the company projects that the mill's second line will be fully operational by 2002 and the third line will be installed by 2004 (APRIL 2004).

RAPP, as one of a number of enormous pulp mills, which have been springing up across Indonesia's 'hinterland' Sumatra, is a fitting symbol of a boom which has seen the country's pulp production rise from 167,000 tons in 1983, about 700,000 tons in 1997, which rapidly increased to become 1.3 million tons and 350,000 tons of paper in 2001, and increased to 2 million tons in 2004 (APKI, 2004). For one thing, the mill exemplifies a trend towards extreme concentration.

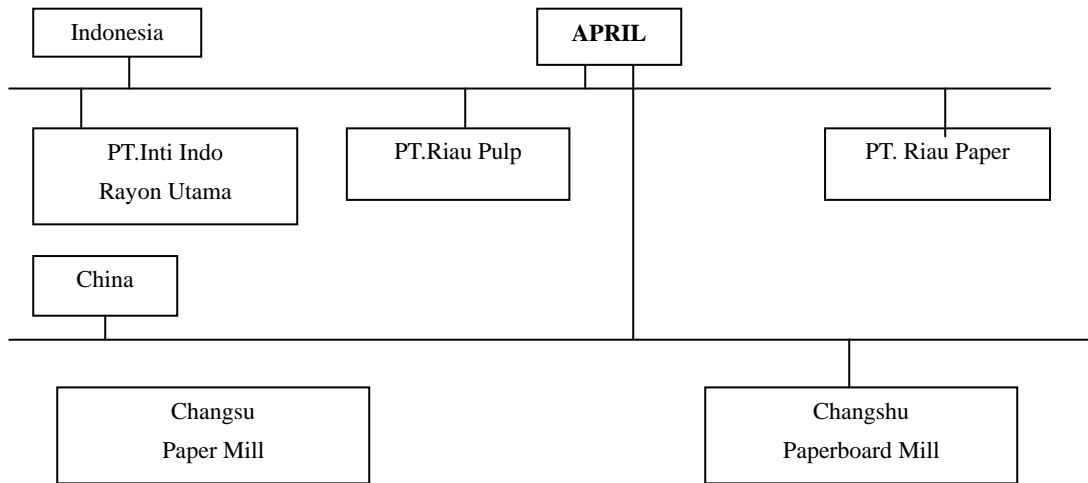
APRIL, like APP, also sold corporate bonds on international capital markets to raise funds for continued expansion. It was listed on the New York Stock Exchange in 1995 to obtain common shares, which in total amount to US\$1 billion. RAPP might be a model of success of the largest pulp business in the Asia-Pacific region in efforts to establish vertical integration and product diversification. In expansion in China, this group has 100% ownership equity in Changshu Paper Mill and Changshu Paperboard (Figure 7.3). In 1997, UPM-Kymmene one of the sixth largest paper companies from Finland initiated a strategic alliance of pulp supply with APRIL, taking partial ownership of various APRIL facilities.

Figure 7.2 Inti Indorayon Utama (IIU), now under a new name, Toba Pulp Lestari, 2004



Source: *Tempo*, January 21, 2007.

Figure 7.3 Raja Garuda Mas's Pulp and Paper Company



Source: APRIL 2000.

RGM Group launched a business acquisition for Sateri Oy, a fiber factory mill in Finland in 1998. In international Sateri, Sukanto, replaced as commissaries. After five years (in 2003), this company eventually bought Bahia Pulp in Brazil, the total amount reaching US\$91 million. In February 2006, to boost pulp production to 365,000 tons, International Sateri issued a fund of US\$400 million to Bahia. In August 2003, Sukanto also bought an 81.7 percent share of Klabin Bacell SA company, one of the leading pulp factory mills. As a result in 2004, Sateri International's income reached US\$228 million, with profit after tax of US\$44 million. Sukanto also launched a new expansion in China, and bought a 90 percent share in Shandong Rizhao SSYMB Pulp and Paper Co., with a total capacity production of 1.3 million tons.

7.2.2. Raw Material

The existence of raw material, namely 'pulpwood,' is very significant for the operation of a mill factory. As previously discussed, APRIL has two big mill factories in Inti Indo Rayon Utama in North Sumatra and RAPP in Riau. A total area of 284,060 ha was conceded in 1984, 1992 and 1994 to the plantation company of IIU through HTI permits, allowing clear-cutting and settlement on HTI (industrial tree plantations). The concession areas are distributed among five districts, with about 50 percent of the area concentrated in the district of North Tapanuli. The plantations were covered by pines (30%) and Eucalyptus (68%) and nearly 6,000 ha of grassland (2%). The plantation company initiated operations in 1988 to supply the related pulp mill company Indorayon (now *Toba Pulp Lestari*). The mill's demand annually was about 800,000 m³ of pulpwood until 1993, when it increased its

demand through expansion to nearly 1 million m³.⁹³ Around 70% of the allocated area corresponds to cropland and settlements, and a conservation zone, leaving only 86,000 ha feasible for logging and conversion. The average area planted up to 2003 was nearly 5,000 ha/year with a total area planted of about 53,000 ha. Unfortunately, in 1998 the mill faced social difficulties during the economic crisis, and it was closed down from 1999 until the beginning of 2003 mainly due to huge protest by local people concerning water pollution in rivers surrounding Toba.

On the other hand, RAPP's total plantation area is about 330,000 ha in Riau. The allocated areas are distributed among five districts, with about 70% of the area concentrated in the districts of Pelalawan and Kuantan Singingi. The area is covered by *Acacia* forests with about 70% of those in swamp areas. From the total area, RAPP reportedly has access to 195,000 ha of net plantable area at its HTI site (Table 7.5); 85,000 ha at plantation sites held by associated and joint venture companies; and 20,000 ha managed by communities as part of an out-grower scheme. The company claims that through the end of 1999, 108,000 ha had been planted.⁹⁴ The Annual Report 1999 stated that APRIL projects that the company's present pulp capacity of 850,000 tpa will be fully supplied by plantation wood by year 2004, and the planned pulp mill expansion by year 2008 will generate 10 million m³ (APRIL, 2000). Thus, the maximum average area planted up to 2002 was nearly 14,000 ha/year, with total area planted of about 110,000 ha.

Table 7.5 Planned and Actual HTI Plantings (ha) by RAPP in Riau (2000).

| RAPP | Planned Planting | Actual Planting |
|--------------|------------------|-----------------------|
| 92/93 | 20,000 | 400 |
| 93/94 | 7,600 | 7,012 |
| 94/95 | 15,654 | 5,684 |
| 95/96 | 18,000 | 13,459 |
| 96/97 | 30,650 | 20,826 |
| 97/98 | 34,156 | 16,795 |
| 98/99 | 45,378 | 13,178 |
| 99/2000 | 27,682 | 11,336 |
| Total | 199,120 | 88,690 (43.4%) |

Source: Dephutbun (Department of Forestry), 2000.
7-year rotation for harvesting.

⁹³ See Julia Maturana, "Economic Costs and Benefits of Allocating Forest Land for Industrial Tree Plantation (HTI) Development in Indonesia," CIFOR Working Paper No. 30, 2003, p. 10.

⁹⁴ Christopher Barr, *Op Cit*, p. 17.

Actually, RAPP's mill condition until now still suffers from a shortage of pulpwood, especially from HTI's plantation in Riau. To fully supply the pulpwood demand the mill's fiber has been mixed with tropical hardwoods obtained through the clearing of natural forest. Some NGOs, such as Walhi, WWF, and so on, accused RAPP of using an illegal logging supply for mill operation since the 1990s. Roughly 80 percent of this has come from the company's plantation of HTI, which is located in Riau, but much of the remainder has come from an affiliated company's plantation development project. Obviously, the demand for pulpwood will reach 10 million m³ by April 2008, and Jaako Poyry suggested that APRIL will increasingly be forced to obtain import recycled paper from overseas and wood from outside Sumatra, which will entail considerably higher raw material costs than it has paid until now.⁹⁵

7.2.3. Research and Development

APRIL used technology for pulp and paper processing machines made in Finland and other countries, such as Germany, Sweden, Japan, United States, and so on. To be able to master the technology, APRIL engineers took specialized courses under 'home training' with Finland engineers. This course is very significant, because APRIL intended to expand pulp and paper volumes in their factory in Parawang, Riau in the period 2002 to 2006. At present, it is well known that APRIL concentrates primarily on the upstream business, producing pulp, as a basis to expand into downstream paper production. In 1997, APRIL produced about 990,000 tpa of BHK pulp and 120,000 tpa of rayon fiber. APRIL wishes to expand this production to produce 2 million tpa of pulp and 200,000 tpa of dissolving pulp. One business strategy in terms of basic components is that RAPP intends to become one of the lowest cost producers of *Bleached Hard Wood Kraft* (BHK) pulp in the world through the advantages of state-of-the-art technology, economies of scale and transportation.

One of the targets for R&D is how does APRIL produce leading pulp and paper products and also have an access to a geographically expanding market. APRIL seems to have the same objective of becoming a dominant player in Asia. It focuses particularly on Japan, South Korea, Taiwan, Hong Kong and China. Thus, APRIL's international expansion has been made through a combination of green-field projects (Changshu, China), direct acquisition (100%, of a Finnish rayon producer, Kemira in 1997), and a strategic alliance with the Finnish UPM-Kymmene rayon in order to have open access to the market in Europe. In this scheme, APRIL will swap a 30% stake of its new paper operations in Indonesia and China with a 30% share in UPM-Kymmene fine paper operations in Europe.⁹⁶

⁹⁵ *Ibid*, p. 20.

⁹⁶ Yuri Sato (ed.), p. 53.

7.2.4 Professional Management

This company, similar with APP, was initially run as a family business. But since APRIL went public the management must be professional. APRIL entered the Jakarta Stock Exchange in 1990, Singapore, and was then listed on the New York Stock Exchange in April 1995. From this point, Indorayon entered into international debt markets by issuing convertible bonds (US\$60 million in 1991). APRIL further obtained US\$60 million in 1992 maturing in 2002. Further, Indorayon issued US\$110 million senior notes in 1993, and US\$150 million guaranteed notes in 1996. Another subsidy, RAPP, issued US\$300 million Yankee bonds in 1995 and a US\$100 million commercial paper program in the local and regional markets.

Table 7.6 Business Strategy of APP and APRIL

| ISSUES | APP (Sinar Mas Group) | APRIL (Raja Garuda Mas) |
|-----------------------------------|---|--|
| HTI Plantation | 632,500 ha (June 2006) in Riau and Jambi. The target is 1.2 million ha in 2010 in many provinces. | All 614,000 ha: 284,000 ha in North Sumatra; 330,000 ha in Riau |
| Products Scope & Diversification | Pulp, paper and <i>paper grades</i> (newsprint, printing & writing paper, packaging, coated paper, tissue, containerboard, boxboard, etc.) | Pulp, rayon, and specialty paper |
| Product Market Focus | Aggressive capacity expansion Low cost producer Asia and global market Full vertical integration Wide products and value-added products | Aggressive expansion Low cost producer Asia and European market Medium-level vertical integration Limited & specialty products |
| Production Facility | Indonesia, China, India, Malaysia | Indonesia, China, Finland (planned) |
| Management & Institutionalization | Professional managers Listed on Jakarta SX, Singapore SX, New York SX Actively issuing Yankee Bonds Selective hiring of expatriates | Professional Managers Listed on Jakarta SX, Singapore SX, New York SX Limited issuing of Yankee Bonds Selective hiring of expatriates |
| Market | Asia: Indonesia, ASEAN, China, Japan, India, Middle East, Australia, Europe, USA, etc. | Asia, Europe, USA |

Source: APP and APRIL, processed 1990s-2000s.

In the APRIL group, only Soekanto Tanoto and his brother are involved as executive managers. The other top managers are mostly expatriate professionals from Indonesia and other countries. Second level directors in many sectors are more diversified, some being expatriates.

CHAPTER VIII IMPACT ON ENVIRONMENT

Introduction

The development of pulp and paper industries in Indonesia has rapidly increased from 46 non-integrated factory units in 1990 to become 72 units in the 2000s. Thus, production of paper also increased from 3 million tons in 1990, to 6.3 million tons in 1999, and further increased to become 7.6 million tons and 5.2 million tons of pulp in 2004 (*Japan Pulp and Paper, 2005*). The consequence of this paper scheme, in terms of roundwood consumption, is a drastic increase from 3.4 million m³ in 1990, to 20.2 million m³ in 2002, becoming 28.9 million m³ in 2005 (Table 6.5). Yet, not all pulp and paper companies have wisely and properly managed their wood demand from HTI (*Industrial Tree Plantation*). Some of them provide their demand by extraction wood from state national parks and protected forests, which is considered to be an “illegal log” supply. Some pulp and paper industries do not even pay attention to management of their water treatment, which subsequently affects water and air pollution. This phenomenon, causing serious environmental problems such as deforestation, flood, forest fire and soil erosion, water pollution, and so on, are considered very dangerous for health and sustainable development.

This paper focuses on critical protests launched by NGOs, academics, and local people as indirect actors concerning environmental pollution. This pollution was carried out by the pulp and paper industries under the holding company APP (Indah Kiat Pulp and Paper, etc.) and APRIL (Indo Rayon and RAPP) in Riau and North Sumatra. The protests are very significant for their effect on the accountability and transparency of the management of the companies concerned and on their social responsibility toward a better environment.

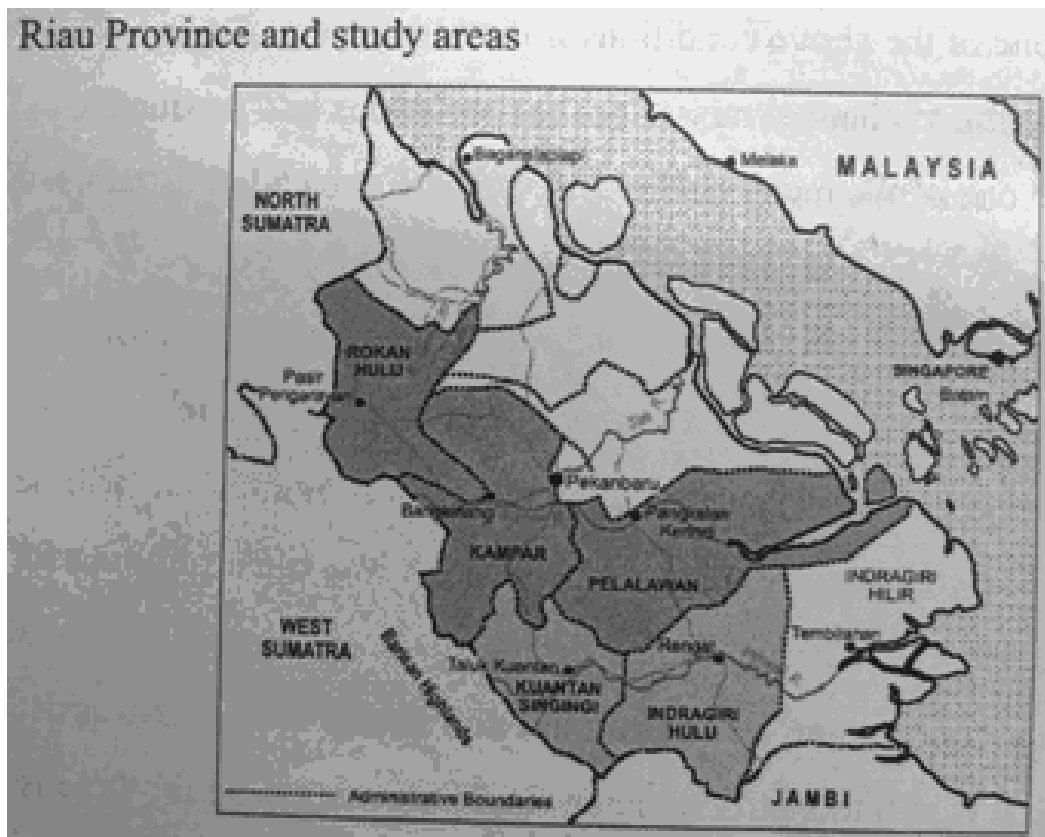
8.1. Deforestation

There is a huge demand for timber of all types, which inevitably puts pressure on Riau’s forest depletion, which is being driven largely by this fact. Production forest in Riau that previously accounted for 4.1 million ha, with 49 HPH Concession units in 1990, has rapidly decreased to become 2.6 million ha in 2002, only about half (24 units) of HPH remaining, the production of roundwood reaching 1.1 million m³ per year.⁹⁷ In the case of

⁹⁷ See Hidayat, Herman, “Dynamism of Forest Policy in Indonesia” (Ph.D Dissertation), submitted to the Department of Forest Science, The University of Tokyo, November, 2004, p.55; the driving factors of forest area decrease are due to forest conversion into palm oil plantation (almost half), HTI plantation area, transmigration area, and other plantations. See Dinas Kehutanan Provinsi Riau (*Forestry Agency of Riau Province*), 2001.

Riau province, where 15 plywood factories, 345 legal sawmills, 27 molding factories and the largest pulp and paper companies, namely Indah Kiat (APP) and RAPP (APRIL), are located, wood demand for raw material reached 10 million m³ in ????, but wood supply legally procured was calculated from other sources to be just six million m³. Thus, the wood deficit registered four million m³. Up to 70,000 m³ of raw logs are reportedly smuggled annually to Malaysia and Singapore (*Riau Pos*, June 23 and 27, 2000), while mangrove chips are exported legally to Japan. Around 1 million m³ may now come from IKPP's *Acacia mangium* plantations (Barr, 2000), and some other wood may come from IPK (wood utilization permit) trees cleared from their plantation sites (palm oil). The remaining deficit might be fulfilled from illegal sources or from outside the province.⁹⁸

Figure 8.1. Riau Province with some districts and rivers



Source: Indonesian map of Riau Province, 2001.

⁹⁸ See Lesley Potter and Simon Badcock, "The Effect of Indonesia's Decentralization on Forests and Estate Crops", CIFOR, October, 2001, p. 10.

In fact, the Forestry Agency of Riau Province (Map 1) gave the area licensed for pulp plantations (HTI pulp) by four companies: Arara Abadi (IKPP), RAPP, Satria Perkasa Agung and Sumatra Sinar, as a total of 782,959 ha in December 1999. In reality, the total area planted to pulpwood by the three active concessionaires (Arara Abadi, RAPP, and Satria Perkasa) up to January 2000, according to Forestry Department sources, was 270,887 ha, only 54% of that planned. Two-thirds belonged to IKPP and most of the remainder to RAPP (Dephutbun, 2000). However, the area is not totally under *Acacia*. Both Barr (2000) and Jaakko Poyry (1998) predicted serious fiber shortages for both companies in the near future (Table 6.5), and that legal supplies of mixed tropical hardwood within an economic distance of both mills will be exhausted by 2005 (See: national timber demand reached 28.9 million m³).

From this point of view, fulfilling the shortage of timber clearly shows that ‘illegal logging’ is urgently needed by timber traders (*Cukong*) cooperating with local people for the cutting of trees. In countries where illegal forest use, such as illegal logging, takes place, it is not just an outcome of poor governance and corruption (in the case of Indonesia), but is an integral part of local and national political economies. Global demand for timber and burgeoning domestic timber markets are major drivers of illegal extraction.⁹⁹ As a result, the pressures on Riau’s forest will be a heavy burden, especially for forestry apparatus agencies, whether local or central government, to maintain protected forests (Bukit Betabuh in Kuansing, Bukit Suligi in Kampar) and conservation areas, including the Bukit Tigapuluh National Park in Indragiri Hulu. So far, the main functions of this conservation forest are very significant, such as water preservation, biodiversity storage, carbon sinks, home for flora and fauna, and so on. If the National Parks and protected forests could be well managed, it will have a great impact on water supply for agricultural benefits among local people and strictly prevent flooding in the rainy season. By contrast, if this upper land is destroyed, it will eventually cause damage downstream, namely floods and soil erosion.

The indication has been clearly shown that ‘deforestation’ by timber traders (*Cukong*) and mining activities (coal), and palm oil plantations is occurring in upper land in Riau. The consequence was that it subsequently caused huge floods in the Kampar and Siak Rivers and soil erosion in the rainy season in 2000 and 2001 (*Riau Post*, December 2 and 3, 2002). This flood, seriously affected agricultural infrastructure (schools and health institutes), and livelihoods among indigenous people who depend on forest resources in Kampar and Pelalawan districts. Based on Walhi Riau, and reported in the press, the damage cost estimations in both districts reached Rp.8 billion, which central and local government finally covered with an emergency budget. The lesson from this tragic event, a Walhi officer stated, is that law enforcement implementation must be integrated and serious, and especially the

⁹⁹ See Marcus Colchester (et al.). 2006. *Justice in the Forest: Rural Livelihoods and forest law enforcement*, published by CIFOR. p. xii.

timber traders (Cukong), as the master minds of illegal logging, must be severely punished. In contrast, there must be more cooperative involvement of central and local government, NGOs, academics and local people as stakeholders of forest use in order to maintain sustainable forest management in the future.

To prevent rapid deterioration of deforestation in Riau, Christopher Barr, academician and researcher from CIFOR suggests the large mills run by Sinar Mas/APP and Raja Garuda Mas/APRIL may seek to ship in pulpwood fiber from outside Sumatra once HTI supplies in Riau and surrounding provinces are exhausted. To the extent that Indah Kiat and RAPP seek to purchase chips from outside Sumatra, there is a strong likelihood that they would source this fiber, at least initially, from Kalimantan (Borneo) and West Papua. From an environmental perspective, such purchases would likely extend to those islands the pressures that these large mills have until now exerted on the natural forests in Riau. It also possible that Indonesia's largest mills would seek to obtain plantation-grown fiber from Australia, Thailand, Malaysia, or other countries in the region. However, in addition to the distances involved, importing chips would force these companies to pay world market prices for their wood, which are several times higher than domestic rates (Christopher, 2000: 21-22).

Furthermore FOE (Friends of the Earth), an international NGO based in London, claimed that since 1995 the vast majority of the fiber going to RAPP's mill has been mixed tropical hardwood obtained through clearance of natural forest. In 2000, 100 percent of APRIL's fiber supply came from cleared rainforests. In 2001, APRIL cleared 220,000 hectares of rainforest. Based on this data, APRIL admits that it will continue to depend upon clear-cutting natural forest until 2008, when it estimates its plantations will meet all pulp capacity requirements. There are also strong indications that legal supplies of mixed tropical hardwood may not be available within a commercial distance of the mill by 2005. As a result of its unsustainable operation, APRIL is running out of wood.

Investigations into four areas of natural forest clearance in Sumatra demonstrate that APRIL's operations are driving the clearance of High Conservation Value Forest both within and outside APRIL's concessions. One of these areas is APRIL's largest concession area, known as the Pelalawan sector. Two of these rainforest areas are close to Bukit Tigapuluh National Park, The forth is in an area of forest known as Tesso Nilo. WWF researchers have recently discovered that this is the most biodiverse lowland forest in the world, a home to tigers, elephants, gibbons, tapirs and a staggering diversity of plant life. The WWF investigation tracked 110 logging trucks from the rainforest to the RAPP pulp mill in Riau. Finally WWF and local stakeholders are demanding that APRIL stop logging this area immediately and are calling on the government to fully protect the Tesso Nilo forest without delay.¹⁰⁰ By contrast, APRIL would not be able to undertake its destructive activities

¹⁰⁰ See Briefing from FOE (*Friends of Earth*), London-based NGO, on "Paper Tiger, Hidden Dragons 2: APRIL Fools," February 2001, p. 3.

without market support. These companies (such as Paper One in the UK, David John (Papers) Ltd, Davies Harvey Murrell, GF Smith, etc.) must therefore accept partial responsibility for supporting the catastrophic damage that has occurred in recent years to Indonesia's forests. By associating themselves with such practices they have also underestimated the reputation risk facing their business.

8.2. Soil Erosion

The driving factors behind intensive expansion by big companies such as pulp and paper, HPH Concessions, and palm oil for plantation land in some districts subsequently affects local people and indigenous minorities in Riau, such as Talang Mamak, Melayu, Kubu people, who move to open a new land frontier on upper land. The Bukit Tigapuluh and other national parks (Tesso Nilo, and so on) contain some of the surviving areas of Sumatra's highly diverse lowland rainforest, with an excellent collection of representative flora and fauna. Currently registered, the multiple stakeholders of the park's buffer zone include Melayu and Talang Mamak villagers for conducting shifting cultivation, transmigrants and spontaneous settlers, coal miners, loggers and saw millers (legal and illegal), palm oil interests (large estates and independent smallholders). All of these interests threaten the park indifferent ways. According to LIPI field research findings in Bukit Tigapuluh in June 2005, in some locations illegal logging and mining activities had occurred, which resulted in a critical condition of the conservation forest and requires cooperation among stakeholders to carry out reforestation and forest rehabilitation to recover conservation areas to prevent flood and soil erosion.

Harold Brookfield, scientist from ANU (Australian National University) commented that accelerated soil erosion is the product both *poverty* and *affluence*, each leading to mismanagement of the land, as has been argued elsewhere (Blaikie and Brookfield, 1987). It results from mining, timber extraction, deforestation, land settlement, road building, urbanization, shifting cultivation and the expansion of both peasants and planters into hills. It cannot be prevented, but it can be reduced and controlled at a cost, whether in labor or in cash, and in both cases by inputs into management rather than just production.¹⁰¹ Furthermore, Brookfield suggested that preventing accelerated soil erosion through the adoption of a control program is a social decision, in some measure the responsibility of the actual farmer, developer, or resource manager, and in some measure the responsibility of the state and of society as a whole. This multi-level accountability arises from the domains of the physical and social consequences.

¹⁰¹ For further information, see Harold Brookfield, "The Dimensions of Environmental Change and Management in South-East Asian Region," in Brookfield, Harold & Byron, Yvonne (ed.). 1993. *South-East Asia's Environmental Future: The Search for Sustainability*, Tokyo: United Nations University Press, p. 27.

8.3. Water Pollution

Land conflicts occur between local people and HTI concession holders in many districts in Indonesia.¹⁰² An example of these land conflicts is those that occurred in Sugapa village, Toba, North Sumatra. This conflict occurred in 1987 concerning 51 ha of customary land taken by Inti Indorayon Utama Company (IIU) for an HTI plantation. IIU Company colluded with the head of the village and sub-district to pay Rp.625,000 as a contract for 30 years on the 51 ha. Therefore, the contract price was only Rp.12,500 per hectare. The main difficulty arose when several members of the community did not agree with this contract, and, according to local traditions, all members of the community must agree in order for others to use the land.

Regarding environmental pollution, the effects of the pulp and paper industry can cause long-term effects for future production. It usually occurs in developing countries such as Indonesia, Thailand, Philippines and others that some industrial factories do not have adequate water treatment. Therefore, serious environmental pollution concerning water, air, and biological species can take place. For example, many studies have indicated that P.T.IIU is involved in environmental contamination. According to Kitoshi Uematsu, an expert in chemistry from JICA (Japan International Cooperation Agency), who worked in North Sumatra for some time, the pulp industry, which produces 50-60% pulp, while the remainder, particularly lignin, is digested by chemicals to become waste liquid (*buangan cair*). This waste liquid, if thrown into the Asahan River, can contaminate the water, causing a bad smell, painful skin irritations and more, causing local communities to lose their vital source of drinking water, as well as that being used for bathing and washing. Fishing and agricultural activities stop. Fish and paddy roots die, because they suffer from too much sulfide and alkali. According to the Walhi investigation, rice field production declined 70% because of a high degree of acidic rain. PH levels reached 4-5, a dangerous level for living species. There are many health consequences. Locals more easily suffer illnesses, such as skin diseases, coughs, inflamed throats, conjunctivitis, and more.¹⁰³ Syahwir Syarif, the Director of the Directorate General of the Chemical Industry, summarily rejected this opinion. He stated that it was difficult to connect the emergence of some diseases with the pollution created by the Indorayon factory. In addition, Markus Sudibyo, the Director for Community Development of the Indorayon factory stated that: “the accusation of environmental contamination was totally unfair, as generalizations without public scrutiny were encouraging a negative image of the community and company.”¹⁰⁴ He added that the positive aspects of Indorayon for local communities was the ability of the company to employ 7,294 people, among them

¹⁰² See, “Land conflicts that occurred on HTI plantations in 1994 in sub-district Jangkang, Sanggau, West Kalimantan, between local people and Inhutani III,” Centre for Social and Cultural Studies, LIPI report, 1996.

¹⁰³ See the research report carried out in 1991, which focuses on the health impact of environmental contamination in Porsea by Deddy Yevri. This report is entitled “*Perjalanan Secarik Kertas*,” Walhi, 1992, pp. 70-73.

¹⁰⁴ *Ibid.*

3,730 ethnic Batak, in 1998. The currency flowing into this region in 1996 totaled Rp.25.6 billion, through wages, logging activities, services, and so on. In 1997 it was Rp.23.5 billion, with Rp.10.4 billion through community development projects, such as scholarships for pupils, infrastructure construction, schools, and health facilities. This means that the total, including community development payments and other cash-flows in this region was larger than the Local Original Income (Pendapatan Asli Daerah/PAD) (*Tropis, No. 5/ April 1999*). The management of this factory, according to Markus, had received an ISO Certificate 9002 (for management requirements) in 1995. In the near future the company will attain an ISO 14001 for environmental management quality. Sarwono Kusumaatmadja, the former Minister for the Environment stated that, “relocation of the factory site is the responsibility of the government, because the government previously gave permission for its operation.” Therefore, the Indonesian government should be responsible for maintaining the ‘truth’ for investors.

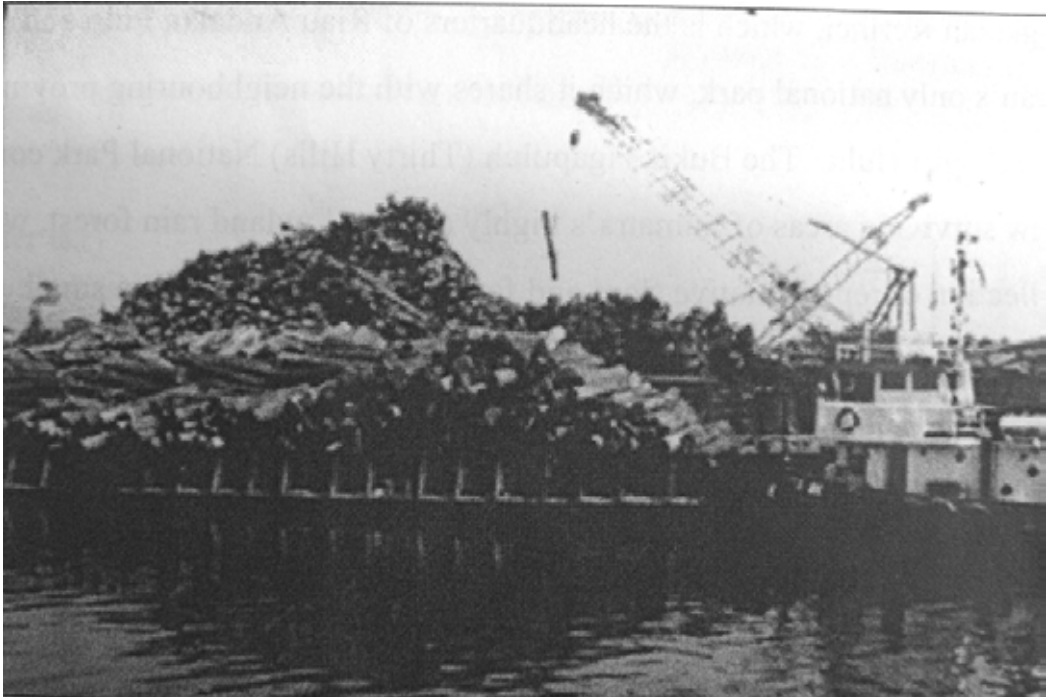
Walhi supported the social protests launched by the local communities of Porsea, requesting that the government close the factory, which was accused of environmental contamination. On 19 March 1999, during the reformation era, President Habibie declared the temporary closure of the Indorayon Utama factory, stating that the government would perform an international public audit concerning Indorayon’s involvement in environmental contamination. The result of this audit was eventually favorable for Indorayon, and the factory was reopened again with tight prerequisites for clean water treatment in 2003, during the Megawati administration.

Pollution of the Siak River by Sinar Mas Indah Kiat also occurred in 1992 (*Jakarta Post*, September 22, 1992; *Suara Pembaruan*, September 4, 1992), which eventually resulted in dead river fish and water contamination.¹⁰⁵ This pollution seriously affected agricultural harvests and fishery products. The protests from local people, supported by Walhi, were successful in claiming compensation for farmers. This compensation took the form of “Community Development”, which meant building village infrastructure, such as roads, schools, health facilities, agricultural and poultry production improvement programs, in the 2000s in Riau (Kampar and Pelalawan districts) and Jambi (Muarabungo, Muaratembesi, and so on) (Table 7.2-7.4). For instance, it became possible to supply agricultural production (vegetables) and poultry production such as eggs and chicken meat to Indah Kiat for the factory workers at market prices. This scheme helped promote local people’s incomes.

The multifunction of the Siak River is very significant. The position of the present capital, Pekanbaru, in the deep section of the Siak River and its location as an overland transit centre from the shallower Kampar River, led to its early importance (Oki, 1986). Today the Siak River (Figure 8.2), which accommodates ocean-going ships as far inland as

¹⁰⁵ See Larry Lohmann, *Op Cit*, p. 33.

Figure 8.2, the Siak River and its economic activities (pulp wood) from some districts



Source: Lesley Potter & Simon Badrock, CIFOR, 2001.

Pekanbaru, is the centre of a major industrial region, including oil installations, pulp and paper, plywood and other wood-based industries. Currently, the Siak River is clean, after the Indah Kiat installed modern water treatment facilities to prevent water pollution. Economic activities are now running normally from the end of the 1990s and into the 2000s.

8.4. Forest Fires

There is close relation between forest fires and deforestation. It has been previously discussed that ‘conservation forest’ in Riau province is mostly land used for palm oil plantations. The most rapidly expanded palm oil plantation rose from 805,000 ha to become 2.2 million ha in Sumatra. Riau is placed in second rank after north Sumatra from the viewpoint of land area. It was widely known that after conservation forests were declared land clearing was carried out for the allocation of palm oil plantations. The role of IPK (*Wood Utilization Cutting*) license holders is very significant. IPK holders processed timber for lumber or wood panels. Typically, IPK holders will send logs that are 30 cm and up to sawmills or plywood mills, while smaller diameter wood is utilized for pulp fiber to pulp

and paper factories.

After carrying out land clearing, the land and the remaining tree roots are usually burned by the private sector, whether domestic or foreign holders, by ordering local people to do the work. As a result, widely burning fires occur mostly in plantation areas. The negative impact of the palm oil sector has produced a higher risk of 'forest fires', as have occurred in the 1990s. As former Minister of Agriculture Syarifuddin Baharsyah, commented, forest burning in 1997 deliberately burned 550,000 ha forest land in Sumatra (Riau and Jambi) and Kalimantan (East and Central Kalimantan). The hot-spots, about 46 percent of those appearing on satellite images on September 28, 1997, were in lands granted for plantations.¹⁰⁶ Indeed, the catastrophic fires of 1997-1998 are estimated to have destroyed approximately 100,000 ha of planted HTIs (Industrial Tree Plantation) in Sumatra and Kalimantan (ADB, 1998).¹⁰⁷ Acacia and Eucalyptus plantations are particularly susceptible to fire as their leaves have high oil content. Trees that are three years of age and younger are the most vulnerable, as their thin bark is not yet fire resistant.

These fires also caused heavy losses later in 1997-1998 as they spread out of control, especially economical losses, by closing some airports for 313 days, which eventually led to financial losses of about Rp.91 billion.¹⁰⁸ Another loss was that of production forest, which reached 578,000 ha, and conservation areas 45,000 ha over the whole of Indonesia. The consequences of these fires for the health of the local populations were many; red eyes, asthma, bronchitis, and *ISPA* (breathing infection) caused by haze.

Finding Results

Actually, Indonesian pulp and paper companies are endowed with a rich resource base (large forests), and low-cost transportation and labor supply compared with Japan. However most pulp and paper companies do not give priority to R&D (*Research and Development*) to develop strategic plans for the survival of their industries in the long run. Firstly, it is important to ensure raw material supplies by developing or inventing new seeds to boost production and properly manage timber procurement. National and local government really cooperates by the issuing of forest land for HTI (*Industrial Timber Plantation*) areas in some districts. For instance Riau province has provided 600,000 ha of HTI concession land for pulp and paper holders, but they have utilized at maximum only half, about 360,000 ha. The rest of the allocated land after carrying out land clearing by clear-cutting ultimately turned the areas into bare land. From the viewpoint of forest management, especially APP and APRIL's practices for obtaining their raw material cannot properly be categorized as

¹⁰⁶ Hidayat, Herman, *Op.Cit.*, pp. 146-147.

¹⁰⁷ Cf. Christopher Barr, 2000, *Op Cit.*, pp. 13. This figure is based on an estimation of HTI areas burned with trees that are three years of age and under. Trees over three years are believed to have been able to survive fires of moderate intensity.

¹⁰⁸ Department of Transportation, 1998.

sustainable forest management, being more oriented to profit making. The consequences of this phenomenon on 'ecological' impacts results in deforestation. As an illustration, it was stated by some sources that APP and APRIL utilized illegal timber products, as accused by some NGOs such as Friends of the Earth (FOE), Walhi, WWF, and so on. As a result, the upper land of some Protected Forest and National Parks such as Bukit Tigapuluh, Tesso Nillo, and so on suffered serious forest damage. Therefore, this deforestation in upstream areas eventually caused damage to watershed areas and ultimately resulted in floods in some rivers, soil erosion in the rainy season, and fires in the summer season. A flood incident occurred in the Siak and Kampar Rivers in Riau and at Batanghari in Jambi at the end of the 1990s. The effect of this deforestation was to cause problems for the management of the eco-tourism sector, because most National Parks in conservation forests suffered 'ecological damage', and certainly tourists eventually became reluctant to visit this area.

Secondly, APP and APRIL do not optimize the development of R&D to improve water treatment management equipment. Actually, by proper management of water treatment, the company can prevent environmental problems, which eventually incur huge costs for compensation to local people. Most of the water pollution which occurred in the Siak River and Asahan River was caused by APP and APRIL. This pollution caused serious water contamination, causing the death of paddy rice and fish on agricultural land and in rivers. Local people certainly lost income and their living standards deteriorated. Thus, grassroots protest advocated by NGOs, whether local or international, and academics from university campuses was extremely significant in requesting the minimization of water pollution to the national and local government. The closing of the Indo Rayon Pulp Factory Mill owned by APRIL took place in North Sumatra in 1998 at the peak of this protest struggle. In the case of Indonesia, although an Environmental Act has been in existence since the early 1980s, water pollution, deforestation, floods, and soil erosion have often occurred in some districts, which clearly shows that sustainable forest management and law enforcement are not properly implemented in the field, compared with the profit-making orientation of businesses.

Thirdly, R&D is still not functioning appropriately to produce high quality paper by paper holders in Indonesia, which will eventually be needed by consumers, whether in advanced countries such as the United States, Japan, Western European countries, and so on, or in developing countries. In fact, Indonesia's supporting factors and comparative advantage in terms of land coverage, surplus labor, raw material supply, low cost of transportation and benefit of being closer to the Asian market (Japan and China) is great. Therefore, APP and APRIL should be aware of these advantageous factors and develop R&D as the strong point necessary to develop rapidly in order to be ranked among the top ten pulp and paper producers.

CHAPTER IX CONCLUSION

This paper has tried to explore the “Development of the Pulp and Paper Industry” in Japan and Indonesia, which emphasizes the goal of this research to examine the applicability of lessons from Japan’s experience in pulp and paper industries to Indonesia. Based on this goal, several questions on research objectives were explored: (1) the role of direct actors (*government and private sector*) in the pulp and paper industries in Japan and Indonesia; (2) the role of firms and the industrial level from the viewpoint of its development, capital, raw materials, production, R&D, and so on; (3) the impact on environmental problems caused by pulp and paper industries; (4) the role of indirect actors in criticizing the environmental problems.

1. The role of direct actors (*government and private sector*) in the pulp and paper industries in Japan and Indonesia. The Meiji government (1868-1912) could be categorized as a strong regime. Meiji centralized controlling power over Japan after taking over from the Tokugawa Shogunate. The Meiji Emperor, accompanied by brilliant government officers (Eiichi Shibusawa, Fukuzawa Yukichi, Ito Hirobumi, and so on), launched the modernization of Japan in several sectors. The Meiji government motto highlighted “the enrichment and strength of the nation” through military and economic development. Thus, the first steps towards economic development were possible when the country was politically united under this very strong regime. Therefore, these achievements, the role of government in Japanese political stability and economic development (*industrialization*), have been regarded as having been very significant. In the initial stage, after recovering political stability, Meiji launched a program to modernize old factories set up by the former Shogun and lords, built paper industries (1872), built infrastructure such as a railway from Tokyo to Yokohama in 1872, improved the condition of roads, established the post office (1871), built Tokyo Gas (1885), constructed textile mills (1890) and iron and steel factories, established financial groups such as Mitsubishi, Mitsui, Sumitomo, Yasuda, which eventually become the *Zaibatsu* (big traders) and so on. (Prue Dempster, 1969). From this viewpoint, the role of government in encouraging Japanese to become “entrepreneurs,” who subsequently become actors as private business, through policy, regulation and access to bank facilities was significant. The entrepreneurs in the *zaibatsu*, which had close contact with the government, came from the *samurai* class in most cases. They shared with the political elite (high government officers, academics) the same social standing and cultural background.

One of the high government officers in the Meiji era, who contributed many ideas

for building ‘entrepreneurship’, was *Eiichi Shibusawa* (1840-1931). Focusing on development of the ‘pulp and paper’ industries, he stated in a speech that “Western civilized nations have attained their full development in every field..... in order to attain Japan’s development as a modern nation, we have to do a lot of things. The important thing is to promote the ‘printing industry’ in order to publish a great number of newspaper and books which will be conveniently available to everyone” (*The History of Oji Paper, 2004*). Following his idea, Eiichi encouraged three large business companies at that time, *Mitsui, Ono and Shimada*, to establish a papermaking industry, using British and United States’ engineering and technology. This effort was fruitful by establishing the Oji Company in 1873 and Nippon in 1949. The existence of paper industries led to newspaper publication booming and many books were published in translation. These activities had a long-term enlightening impact on the Japanese, promoting literacy and high educational standards.

In the initial stage of Oji Company, production reached 547 tons in 1877, compared with imports of 771 tons. The production of paper rapidly increased when in 1911 Ginjiro Fujiwara was appointed president of Oji Company. He was a brilliant leader, who aided progress in the industry by launching a policy for procuring raw material, intensive paper production, and also expanding markets to Korea and Manchuria. He followed Eiichi’s teaching that “the paper manufacturing industry should perform its duty for society.” Thus, after five decades (1936) with Fujiwara in the top management position, Oji became the predominant player, producing almost 80 percent of paper products, 390,000 tons, which eventually reached 1.5 million tons in 1940. In that time raw material from tree plantations was mostly available from Hokkaido and Sakhalin. Unfortunately, following World War Two (1945), Japan’s pulp and paper manufacturing was set back because of the war and the United States’ policy to reduce the big companies’ monopoly in trade. As a result, Oji Company was divided into smaller factories (Tomakomai Paper, Juyo Paper and Honshu Paper).

The recovery after World War Two occurred in the 1970s-1990s from the viewpoint of development, production and wood demand. For example, number of paper and paperboard manufacturers rapidly increased from 265 in 1995 to become 419 in 2003. The number of pulp manufacturers also increased from ten in 1995 to 21 in 2003 (*Pulp & Paper Statistics, 2006*). However, of the 412 factories, just the top 12 companies registered financial results for March 2005; Oji Paper, Nippon, Daio, Rengo, Mitsubishi, Hokuetsu, Chuetsu, Kishu, Tokai, and so on (Table.3.4). In terms of wood demand, this also rose from 110.4 million m³ in 1972, to 109.9 million m³ in 1997, and then slightly decreased to become 86.3 million m³ in 2005 (Table 3.5). In line with the rising of wood demand, paper and paperboard production also rapidly increased from 30 million metric tons in 1995, to 31 million mt in 2001, and became 31.3 million mt in 2005 (Table 3.2). In this matter, Oji Company became the largest producer in 1995, reaching 3.6 million

mt, increasing to 6.0 million mt in 1997 (19.4% production share) with sales of Y980 billion. In second rank was Nippon, producing 3.0 million mt (a 10.1% share) and others.

There are four reasons why pulp and paper industries were able to develop rapidly: (1) the government created conducive conditions by giving incentive credits from the banks, through tax law, and by providing good infrastructure; (2) the sustainability of procuring raw materials (wood) both from overseas and domestically; (3) the function of Research & Development (R&D) was well managed and (4) a big domestic market for paper products reached 80 percent of production, based on per capita paper consumption in Japan of 246.6 kg. This phenomenon was accordingly appropriate with the per capita GDP of Japan reaching US\$36,187 in 2005. On the other hand, Oji and Nippon Paper with production respectively of 3.6 million metric tons in 1995 and 6 million mt in 1997, and ranking seventh and eighth with respectively Y1.0 trillion in sale of business (Table 3.9) putting them among the largest ten global pulp and paper companies in 2003. Viewed from this perspective, pulp and paper is currently categorized as a strategic industry, which contributed a total of Y7 trillion and absorbed 34,839 workers in Japan (Table 3.1) and was placed in rank thirteen (13) among the fifteen largest manufacturing industries in Japan (*Japan Pulp and Paper, 2004*).

In the case of Indonesia, the Dutch colonial powers constructed pulp and paper factories in Padalarang (1923), West Java and Probolinggo in 1939. However, this paper actually contributed to colonial needs not to Indonesian people. The role of the Soeharto regime (1967-1998) in developing the pulp and paper industries was very significant. The government tried to encourage domestic and foreign investors, provided for the facilitation of investment, formulated permission procedures and trade regulations, provided banking facilities, allocated of land for HTI (*Industrial Tree Plantation*), and so on. This government could be categorized as a strong regime and was authoritarian as well as having an economic development orientation. Soeharto centralized control over natural resources such as oil, mining, timber, fishery, and so on, and exploited them for political patronage and group benefits. This regime was committed to political stability and launched economic development in many sectors, including forestry industries, such as logging, sawmills, plywood, pulp and paper manufactures.

The development of pulp and paper manufacture was very impressive. In the period 1975-1980, the total number of factories reached 27 units privately owned and six by states, with a total production capacity of 245,770 tons. The industry developed in the period 1987-1990s, when there were 36 pulp and 41 paper factories. Among these factories, 12 were integrated into larger pulp and paper companies, such as Indah Kiat, Riau Andalan Pulp and Paper, Kertas Craft, Kertas Leces, Bekasi Teguh, Lontar Papyrus, etc. There are twenty large paper and seventeen pulp producers that posted financial results in Indonesia in 2001. However, among the twenty paper companies, just two

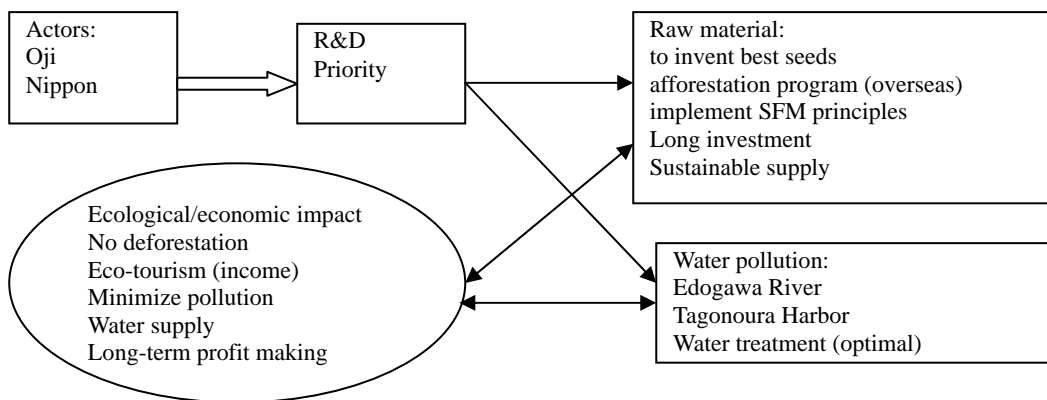
companies, namely under the holdings of APP (Indah Kiat: Perawang, Serang, Tangerang; Tjiwi Kimia, Pindo Deli) and APRIL (Riau Andalan Paper), are currently registered as the biggest regional players in Asia from the viewpoint of production, annual sales, assets, access to markets, and workers (excluding Japan). The production of paper in Indonesia reached 1.4 million tons in 1990, and rapidly increased to become 7.6 million tons in 2004, which consists of 4.1 million tons for paper and 3.5 million tons for paperboard (See Figure 1). Also, pulp production reached 4.1 million tons in 1998 and increased 5.9 million tons in 2004. As a result of pulp and paper production rapidly increasing, the demand of roundwood consumption eventually increased from 16.8 million m³ in 1998 to become 28.9 million m³ in 2005 (*Indonesian Pulp and Paper Association for 1987-2000s*). This phenomenon clearly shows that Indonesia could be categorized as ranking number twelve among the largest paper producers and number nine for the pulp industry among major countries (*The Japanese Pulp and Paper Industry, 2005*). By contrast, the pulp and paper industries were placed at rank number eleven out of the twenty largest manufactures in Indonesia. The foreign revenues received were US\$2.2 billion in 2005 (1.7% share in world export), 110,000 workers were absorbed, and the annual growth in value was three percent in 2004-2005 (*The National statistics Agency, 2005*).

2. The role of firms and the industrial level from the viewpoint of raw material, production, business strategy, and R&D (*Research and Development*). This study highlights the profile of Oji and Nippon Company and APP (*Asia Pulp Paper*) and APRIL (*Asia Pacific Resources International*) in Indonesia as the largest pulp and paper industries in Japan and Indonesia.

Oji and Nippon are predominantly categorized as the largest producers of paper in Japan. They are really aware that their country (Japan) has 'poor resources' and a lack of forest land areas, which might be said to be the 'weakness' of Japan as the largest timber importer (reaching 81 million m³ in 2000). Thus, pulp and paper holders, as an R&D priority launched a strategy to produce the best quality tree seeds. These seeds could be planted in HTI areas (*Industrial Timber Plantation*), which emphasize environmental friendliness in overseas areas. In fact, this policy urgently requires high cost transportation for shipping and cost management. From the forest management perspective, this strategy is very beneficial for two reasons. (1) Japan's forest and its environment could be maintained through sustainable forest management and eventually produce through ecologically friendly methods in Japan. The effect of this condition, was that local government and local people could utilize forests for 'eco-tourism' (mountain, rivers, agriculture, and so on), which was ultimately income generating. This conducive situation is the so-called 'upstream' forest management. (2) By conducting the plantation of trees for the procurement of timber from overseas (Latin America,

Australia, New Zealand, Southeast Asia, China, and so on), Japan actually has shifted ‘deforestation’ and its environmental problems from the domestic arena to become the affairs of other countries. This phenomenon is related to ‘ecological’ impact, and Japan has thus escaped from domestic deforestation, which subsequently does not cause floods, minimizes soil erosion in the rainy season, and ensures annual water supply provisions for the local agriculture and fishery sectors. This condition was established by a long ‘investment’ and long-term ‘profit making’ orientation by stakeholders, especially government and the private sector, whose long-term vision was to prevent ‘downstream’ ecological damage. On the other hand, the companies targeted R&D for the invention of innovative technology by making water treatment equipment to prevent water pollution caused by the industry. This decision is considered to be the ‘strength’ of the Oji and Nippon companies. Thus, the tragedy of the Edogawa River and Tagonoura Harbor pollution incidents, which caused serious ecological damage, acted as lessons for Japan’s pulp and paper companies to take environmental concerns seriously. Since the “Environmental Act” on the protection of water and air pollution was issued by the Diet in December 1958, pulp and paper holders in Japan have reduced their water and air pollution relatively greatly. This was possible because law enforcement and implementation of the Environmental Act towards the industrial holders has been very fair and accountable (Figure 9.1).

**Figure 9.1. Pulp and Paper Management from upstream to downstream
(The case of Japan)**



Source: data processing by writer

Note: SFM (Sustainable Forest Management).

⇨ : access to (R&D institute)

→ : R&D launches priority steps for upstream program (raw material) and downstream (pollution).

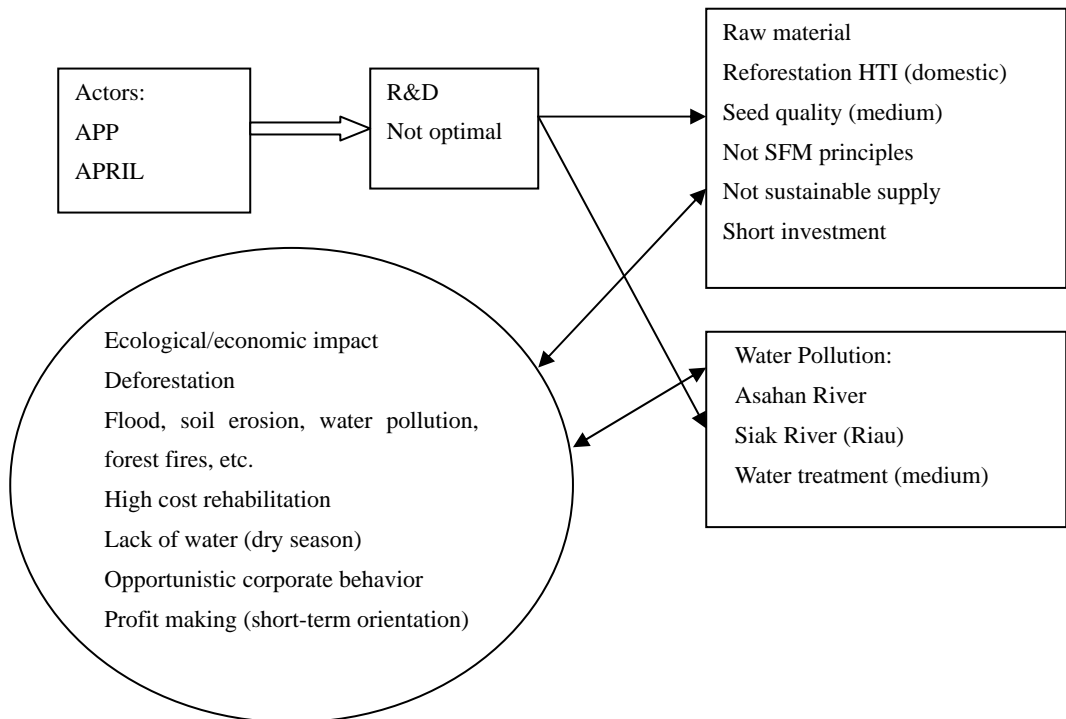
↔ : interaction effect (if properly managed) which will eventually lead to positive results.

In fact, the experiences of Oji and Nippon, which could manage the procurement of raw material and water treatment (from upstream to downstream) through utilization of R&D priorities are valuable lessons for APP and APRIL as newcomers to the pulp and paper industry. By contrast, APP and APRIL are pulp and paper company actors in Indonesia. The companies consider that Indonesia owns rich natural resources, which might be categorized as the strength of the companies. Firstly, this opinion eventually results in pulp and paper holders not optimizing the functioning of R&D to produce the invention of the best quality tree seeds and consistently planting HTI (*Industrial Timber Plantation*) under sustainable forest management principles. This forest management policy really needs to be implemented from the viewpoint of sustainable procurement of raw materials for the survival of their companies. Some sources have stated that APP and APRIL have often utilized ‘illegal timber’ as raw material from protected and conservation forests, as they have been accused of by some NGOs such as FOE (Friends of the Earth), Walhi and WWF. This situation means that APP and APRIL have not consistently implemented sustainable forest management principles, and have engaged in what is familiarly called ‘opportunistic corporate behavior’, namely seeking short-term profit making. If deforestation takes place as a consequence of illegal logging, these critical conditions will ultimately affect upstream areas, will cause seriously degraded watersheds and cause ecological damage downstream, such as floods, forest fires and soil erosion. For example, floods occurred on the Siak and Kampar Rivers in Riau and the Batanghari River in Jambi at the end of the 1990s, which led to agricultural, fishery and infrastructure damage for local people. This condition was certainly a bitter tragedy for other stakeholders, especially the local and national government, local people, and even the private sector (Figure 9.2). It could clearly said that this phenomenon was due to the malfunctioning of R&D on the part of APP and APRIL in not taking strategic decisions through a long-term vision for investment and long-term profit making, which would eventually produce win-win solutions among stakeholders.

Secondly, R& D is not utilized optimally for producing water treatment equipment to minimize water pollution. This policy is considered to be a ‘weakness’ of the companies. APP and APRIL were still involved as water pollution contributors in the Siak and Asahan Rivers in the 1990s, which subsequently caused ecological damage to agriculture and fisheries, such as the death of paddy rice and fish. This condition resulted in the loss of income for local people and local government. Although an “Environmental Act” was issued by the government in the 1980s, law enforcement is not consistently implemented in the field with fairness and accountability to industrial holders. The government behaves, especially during the Soeharto administration, with favor towards the most highly prioritized ‘industrialization’ sector, which they considered to make a big contribution to foreign revenues and job creation, but is lenient on the negative side, namely on pollution that eventually causes ecological damage. This

condition drastically changed in the Reformation era (the 2000s) after Soeharto stepped down; the implementation of law enforcement really occurred, the Indorayon factory mill being closed in 1999 by the central government during the Habibie administration, although the factory was ultimately reopened during the Megawati administration in 2003, following the recommendations of an International Environmental audit.

**Figure 9.2 Pulp and paper Management from upstream to downstream
(The case of Indonesia).**



Source: data processing by writer

==> Access to R&D institute

—> R&D utilized to launch steps for upstream program (raw materials) and downstream program (water pollution).

◄> : Interaction between parties (if properly managed), which would eventually produce results.

Thirdly, R&D is not utilized optimally to target the discovery of new paper and paperboard products, despite Indonesia's supporting factors and comparative advantage in terms of land coverage, raw material supply, lower transportation costs, the benefit of being closer to the big Asian market (China, Japan, S. Korea, Taiwan, and so on), and a

good climate for fast-growing trees (*Eucalyptus*). This condition is categorized as one of ‘weaknesses’ of APP and APRI, which needs to be moving towards the production of high quality of paper and paperboards (especially newspaper and other printing paper), for which currently East Asian countries have a big market. Other particularly advanced countries such as in Western Europe, the United States and Japan also provide market access for these high quality paper products.

3. NGOs, academics, local people and Farmers and Fishery Associations launched protests against environmental pollution caused by the private sector. Jun Ui, Professor of Economics in the Institute Regional Studies at the University of Okinawa, launched critical comments on environmental destruction. He said that pollution occurred in Japan due to the attitudes of the political elite and the misguided supervision provided by national and local government functioning in collusion with private companies, which subsequently resulted in environmental problems. Another protest by NGOs took place when a Fishermen’s Cooperative managed by Okajima Tasaburo protested against Honshu Paper because of pollution in the Edogawa River in June 1958, in which ten buses and 1,000 people came to the Diet (Parliament) and to the Tokyo Government Office. This protest was followed by an incident between fishermen, factory workers and policemen. As a result, the Tokyo Governor required Honshu Paper to cease operations until after water treatment equipment had been properly installed. The company finally paid Y5,100,000 in “compensation” to the Urayasu Fishermen’s Cooperative.

Further, Friends of the Earth (FOE), an international NGO based in London, criticized a RAPP (Riau Andalan Pulp and Paper) factory for being the cause of deforestation that had occurred in Riau. FOE clearly accused APRIL (as holding Company of RAPP) of clearing 220,000 hectares from rainforest for its raw material. Investigation into four areas of natural forest in Riau carried out by FOE found that APRIL’s operations were driving the clearance of high conservation value forest close to Bukit Tigapuluh National Park and Tesso Nilo.

On the other hand, Harold Brookfield, an academician from ANU (Australian National University), presented comments on soil erosion as the product of both poverty and affluence, each leading to mismanagement of the land. He said that actually there are many driving factors of soil erosion such as timber extraction in upper land, shifting cultivation for subsistence agriculture, land settlement, mining extraction, and so on, but the most important factor he suggested was that central and local government should be responsible for implementation of law enforcement and strict sanctions to prevent these actions.

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