

## The Rapid Growth of Coconut Estates in Indragiri Hilir 1980s – 1990s

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### Abstract

Coconut estate is one of the vital agriculture sub-sectors in Indonesia because it has an important role in absorbing employment. In the early 20<sup>th</sup> century, Netherland Indies was one of the major copra exporters globally, and the eastern region of Nusantara contributed as the leading producer. However, in the 1930s – 1950s, the coconut-based economy's contraction phase in the eastern region had weakened the whole production. The Indonesian government tried to recover coconut estates and its economic market through several efforts, such as rehabilitating smallholder coconut estates, recovering copra trading, and starting coconut industrialization. Used historical research methods, this article described the shifting of Indonesia coconut-based economy from the past center of trade and production, in the eastern region of Indonesia, to a recent major producer and industry cluster in the Indragiri Hilir, Riau Province. In the 1980s – 1990s, the government efforts to improve coconut commodities have led to shifting the Indonesian coconut-based economy to Indragiri Hilir. Several policies issued by the government such as Smallholder Coconut Development Project, Proyek Peremajaan Rehabilitasi dan Perluasan Tanaman Ekspor (PRPTE), Nucleus Estate Smallholder (NES), Nucleus Estate Smallholder Transmigration (NES-Trans), and the local government funding, as well as the liberalization of coconut trading regulation, had stimulated rapid growth of coconut estates in Indragiri Hilir. Even though several schemes and governments attempt to develop smallholder coconut estates, the expansion rate was mostly dominated by self-funded smallholder coconut estates. During the 1980s – 1990s, the increasing demand for coconut from large-scale processing industries had attracted the smallholder to cultivate coconut.

**Keywords:** Smallholder Estates; Coconut Plantations; Industrialization; Copra Commodities.

### Introduction

Increasing demand for the coconut on the international market began in the 1880s when the European oil and fat industry grew copra (*dried coconut kernel*) as raw material for soap and butter production. About one-third of world copra exports in 1909-1937 came from the Netherland Indies. However, this condition did not last long; the depression of the coconut economy in Sulawesi and the Maluku Islands (Eastern Indonesia) occurred in the 1930s-1950s. When the depression of coconut economy, the colonial government tried to rehabilitate the copra trade, but it was failed. Until the transition of power to the Republic of Indonesia, the copra trade had not recovered.

Since the 1970s, the coconut estates centre of production has shifted to Sumatra Island, especially in the Indragiri Hilir – Riau. This region has shown enormous growth of coconut plantation and production in the 1980s - 1990s that made Indragiri Hilir the largest cluster of coconut plantation and producer in Indonesia. According to Republic Indonesia Statistical Agency (BPS RI) Coconut and its processed products have long been the primary commodity of Indragiri Hilir (BPS RI, 1983, 1984, 1993, 1998; BPS Indragiri Hilir, 1978 – 2017).

In 2017, Indragiri Hilir had 429,942 Ha of coconut estates and had 341.295 Tons/year coconut production or contributed 11,9% of the whole Indonesia coconut production. Indragiri Hilir coconut estates have involved 208,522

smallholders and 6.087 workers in the coconut plantation private companies among 703.734 inhabitants of Indragiri Hilir (BPS Indragiri Hilir, 2018). Furthermore, the coverage of Indragiri Hilir coconut economy also extends to five large-scale coconut processing Industries and dozens of small and medium coconut derivative products industries which are operated in Indragiri Hilir. Moreover, the agriculture sector has dominated the Gross Domestic Regional Product (GDRP) of Indragiri Hilir for a long time. In 2016, the agriculture sector shared 49,15% of the whole Indragiri Hilir's GDRP (BPS Indragiri Hilir, 2017).

Emmanuel Le Roy Ladurie has contributed significantly to the agricultural economic history discourse. He found that behind the conjuncture of agricultural commodities, there was a cycle which he called the Great Agrarian Cycle (Rowan, Ladurie, & Day, 2006). In the beginning of the 20th century, coconuts trading and production in Eastern Indonesia dominated the production and export of Indonesian coconut. Unfortunately, it did not last long, the east region's coconut-based economy fell on the expansion phase in 1883 - 1930, and then the contraction phase occurred in 1930-1958 (Asba, 2018; Heersink, 1994).

In the early of nineteenth century, the Banjarresse imigran from South Kalimantan began the coconut cultivation on Indragiri Hilir and another east coast Sumatera region (Potter & Badcock, 2004). Long drought season and war traumatic after the annexation of Banjar Sultanate by Dutch Colonial, had brought an exodus of Banjarresse to other places which have similar geographic as swampy and rivery Southern Kalimantan landscape (Potter, 2001). Since then, Indragiri Hilir has adhered to coconut; the versatile plant could easily found in all corners of Indragiri Hilir. Because of its large coconut plantation, Indragiri Hilir got an appellation as both *hamparan kelapa dunia* [the stretch of coconut world] and *Negeri Seribu Parit* [thousand trenches land] for many ditches which used by the farmer for transporting coconut through the rivers or canals.

The coconut estates of Indragiri Hilir experienced an interesting phenomenon. Since 2010, the selling price of coconuts and copra at the farmer level has fallen sharply (Plantation Agency of Indragiri Hilir, 2017). Natural factors also aggravate the condition of Indragiri Hilir's coconut

estates. Water intrusion has drawn hundreds of thousands of hectares of coconut estates, it caused coconut trees to die or their productivity dropped dramatically. Since 2012 there has been a decreasing number of area and productivity of Indragiri Hilir coconut estates (Simpala, 2017). Coconut estates are slowly being abandoned by smallholder because they can no longer be a pillar of smallholder economy. Previously, Simpala (2018) had recorded the recent setback of Indragiri Hilir coconut estates and industry. When referring to "a great agrarian cycle", this phenomenon may be part of the contraction phase of Indragiri Hilir's coconut economy. However, the historical record of Indonesia coconut estates has described that a rapid growth of coconut estates took place in the 1980s –1990s period which marked by the largest extent of Indragiri Hilir coconut estates.

From historical perspective, times have presented a lesson for the future. It described the uniqueness, tragedy, and golden age of several commodities in Indonesia. For example copra in Sulawesi and Eastern Indonesia (Asba, 2018; Heersink, 1994), nutmeg on Banda island (Loth, 1995), sugar cane estates and sugar industries in Java (Zangger, 2016), agricultural involution of subsistence crops in Java (Geertz, 1963), nationalization of colonial plantation in East Sumatra (Wasino, 2016), the coffee commodity in Priangan in the nineteenth century (Zakaria, 2017), and many more. Those are the themes that describe the history of agricultural commodities in Indonesia.

This article describes the expansion phase of Indragiri Hilir coconut estates in the 1980s-1990s and the shifting of Indonesia's coconut-based economy to Indragiri Hilir. This study's main questions are (1) Why in the 1980s-1990s, coconut estates of Indragiri Hilir grew rapidly? (2) What factors stimulated the massive growth of the coconut estates in Indragiri Hilir during the 1980s-1990s? (3) How government efforts and policies impacted the development of the coconut-based economy? (4) Which expansion schemes contributed significantly to the expansion? Hopefully, this article is able to educate the Indragiri Hilir society about its agricultural economic history and helped the stakeholder understand the current crisis of Indragiri Hilir

coconut estates. Furthermore, this article also aims to attract other researchers to solve the coconut-based economy problems in the Indragiri Hilir and to record the economic history of Indragiri Hilir and Riau Province.

## Method

This article is based on the research conducted by authors in 2018. During the heuristic phase, the authors had collected coconut-based economy statistics and information from official documents belonging to the Plantation Agency of Indragiri Hilir, Trade and Industry Agency of Indragiri Hilir, and Central Agency of Statistics of Indragiri Hilir. Also, publications released by the central government through the Ministry of Agriculture. Moreover, other information also coming from an interview with Mr. Sahduyanto (former officer of Coconut Working Center 1978 – 1993; and former officer Data Collection Division of Plantation Agency of Indragiri Hilir 1993 – 2004) and Mr. Aswin (officer Marketing Division of Indragiri Hilir Plantation Agency). The authors also tried to collect data from the largest private industry of coconut processing in Indragiri Hilir under the Sambu Group ownership. Until this article was published, they have not responded yet.

Generally, historical research uses heuristic, verification, interpretation, and historiography for collection data, analysis, and presentation. The economic history has its characteristics, as Tuma (2006) states that economic history is a quantitative and/or qualitative analysis of certain economic changes, including observation and identification of changes, detailed indicators, selection, classification, data analysis, and attempts to conclude causes of economic changes.

The data are selected in which related to coconut estates (land area and production/year, and so on), trade-in coconut and copra (coconut and copra prices, export-import volumes), and coconut processed products industry (demand volume and industrial production capacity). At this stage standardization of data units is also carried out (conversion from kilograms and quintal to ton; average and growth per year calculation). Furthermore, the data will be presented in the form of tables or chart before conclusions are drawn.

## Development of Indonesia Coconut Estate and Coconut Trading

One of the agricultural commodities that still has economic value and a large contribution in supporting the Indonesian economy structure is coconut (*cocos nucyfera*). As a tropical archipelago country, coconut is spread throughout the Indonesia archipelago. Coconut is a 'folk crop', currently almost a whole (98%) of coconut cultivation is carried out by smallholder coconut estates. So any fluctuations on the coconut-based economy will directly impact the smallholder.

Coconut has been cultivated by the inhabitants of the Indonesia archipelago since a long time ago, one of its notes lies on the coconut tree relief that found in the Borobudur Temple, Magelang, Central Java. Coconut is dubbed as "*the tree of life*" because almost all parts of coconut plants can be utilized by humans (Asba, 2018). It also dubbed as "*a heavenly tree*" because for the western coconut is a symbol of tropical heaven (Banzon & Velasco, 1982).

The economic prospect of coconut in the past trading was adhered to the term "green gold" (Heersink, 1994) like other colonial agricultural commodities such as spices, nutmeg, pepper, etc. In the colonial era, Europeans considered coconut as "lazy man's crop" (Heersink, 1994), because coconut cultivation can be done very simply, but still brings great economic benefits.

At the beginning of the 20<sup>th</sup> century, coconut plants were managed especially as one of *onderneming* (plantation company) plants by the Dutch Colonial, but coconut cultivation by *onderneming* had very small amounts compared to other agriculture commodities plantations

Most of the cultivation attempted by European investors failed due to problems with labor supply and a long period of harvest. Coconut needs eight to ten years before it can be harvested; this was a long investment time for plantation to provide profits. While traditional coconut cultivation was carried out in a simple way for the local farmer, the treatment only carried out during the initial planting period; after that, the rest of the coconut was left to grow naturally until it can be harvested (Heersink, 1994).

Coconut began to trade in the international market since the high demand in the European oil and fat industry for copra during the 1880s. At this time, Netherland East Indies copra dominated international copra trading early in the 20<sup>th</sup> century until 1937 (See Table 1).

Table 1. Share of Copra Export from Netherlands Indies on The World Market, 1909-1937

Year	World	Neth, Indies	Phillipi nes	British Malaya	Ceylon
1909-1913	7,25	2,38	1.30	0.72	0.42
1924-1928	11,28	3,64	1.82	1.67	1.06
1929-1933	12,25	4,32	1.94	2.01	0.80
1934-1937	13.42	4,77	2.81	2.04	0.70

Source: Heersink, 1994.

In 1915, Dutch colonial established Moluksche Handel Vennootschap (MHP) based in Maluku, the main objective of MHP was to collect and to market smallholders coconuts (Dereinda & Susila, 1992). At this period, copra was one of Indonesia's largest export commodities in addition to rubber, petroleum, tea, coffee, sugar, tobacco, palm oil, and tin (See Table 2). Although its value does not play a significant role in the economy of the archipelago as a whole, coconut has direct influence on the smallholder economy, because mostly coconut estates cultivated by smallholders.

The contraction phase of Netherland Indies's copra occurred in the 1930s (See Table 2) which the overall production and export had declined around 40% from 1920s. When copra trading was declining in the 1930s, the colonial government replaced the MHV by Het Copra Fond (1940 – 1949).

The role of the HCF was more intensive than previous institution, HCF also had responsibility to improve the quality of copra. However, during Japan occupation (1942-1945), the main function of the HCF was shifted into source of fund for the Japanese army. When the Dutch regained power in 1946, HCF was restored (Dereinda & Susila, 1992). In 1950s, the Indonesian government established the Copra Foundation (Yayasan Kopra) and tried to regulate the coconut trade with the main objective to improve the fate of coconut smallholders. However, this objective was not achieved because

the Foundation were more dedicated to achieving political goal (Asba, 2018). Prolonged disputes between the foundation and its subordinate in several provinces had continuously weakened the Foundation. As a result, the government released a new regulation through President Decree Number 17/1960 to refresh the copra trade regulation and replace Copra Foundation with the *Koperasi Kopra* (Cooperative of Copra) in 1957. However, like the Foundation, the cooperative could not effectively achieve its objective to improve the fate of coconut smallholders (Asba, 2018; Dereinda & Susila, 1992).

Although the Indonesian government continuously intervened coconut development, various problems were persistently encountered. The problems were interrelated each other, including trade inefficiency, imbalanced margin distribution, interlocked market, low quality, low farmer income, small estates scale, inappropriate cultivation, low-maintenance and management. Moreover, the prospect of coconut market is getting worse because of the pressure of palm oil which has comparative advantage in Indonesian domestic market.

Since the Soeharto's Orde Baru regime took control of Indonesia, in 1966. The government tried to improve the Indonesian economic through Five Years Development Program or also known as "Pelita". Pelita had been done on six phase programs from 1<sup>st</sup> Pelita until 6<sup>th</sup> Pelita. The main priority of the Pelita program was to develop Indonesia as an industrialized country with agriculture commodities as the main source. The government efforts to achieve this goal led several policies to improve agriculture sector such as: Smallholder Coconut Development Project, *Proyek Peremajaan Rehabilitasi dan Perluasan Tanaman Ekspor* (PRPTE), Nucleus Estate Smallholder (NES), Nucleus Estate Smallholder Transmigration, and the provincial donation to develop smallholder estates. To fund these programs, the Indonesia government got several loans from World Bank and Asian Development Bank in the 1970s until 1990s.

Traditionally, Indonesia accounted until the late 1960s for about 16% of world copra and coconut oil exports. However, the exportable surplus has been steadily eroded by the rapid growth in domestic consumption, which has

outpaced production growth. Because of economic development and population growth, coconut oil demand steadily increased during 1970-1986. On the other hand, in the domestic market increase in supply was not as fast, which led to excess demand for coconut oil. The supply increased by 47% while the demand by 87% (Dereinda & Susila, 1992). Since 1977, Indonesia had to import coconut oil or substitute other oils to meet the rising domestic demand. As the most efficient oil source, palm oil quickly dominated the domestic oil market (see Table 3).

The competitiveness of palm oil in the Indonesian domestic market and negative campaign on the international market had suppressed the development of coconut smallholders in the early 1980s (Dereinda & Susila, 1992). Smallholders' interest to maintain or develop their estates was declining in almost region of Indonesia (see Table 4). The declining share of coconut oil in the Indonesian domestic market is mainly due to its higher price than palm oil. In other words, coconut oil is less competitive in the domestic market.

At the same time, there was a negative campaign to coconut oil in the international market that alleged coconut oil tend to raise cholesterol more than the other fats, possibly because coconut oil is rich in lauric acid, a fatty acid that the body processes slightly differently than it does other saturated fats. Nonetheless, this allegation has never been proven. Fortunately, in the 1990s, coconut oil reputation in the international market had recovered from the damaging allegation and once raised the demand for coconuts (BPS RI, 1993).

Another factor that also hit coconut commodity that in the early of Orde Baru regime the government had more attention in developing palm estates (*Elaeis Guineensis*) rather than coconut estates, it was shown by the government priority on the Nucleus Estates Smallholder (NES) that before the 1980s mostly concern to extent palm estates or other tree crops. NES for coconut crops just began to develop in 1981 during the 5<sup>th</sup> and 6<sup>th</sup> NES project and through Smallholder Coconut Development Project (SCDP). However, as part of the agriculture sector, smallholders coconut still had an important role in

term of absorbing employment and there were thousands of coconut smallholders' estates had still existed.

In June 1991, the government launched a packet of economic policies, known as Pakjun '91. It was an integrated part of policies to increase Indonesia economic efficiency. This policy aimed to reducing import tariffs, simplifying marketing channels, and improving conditions for investment. The main consequence of the policy was the liberalization of the coconut trade. Under this policy, traders can freely not only export but also import copra and coconut oil.

A study on coconut smallholders prior to *Pakjun '91* was reported by Dereinda & Susila (1992). The policy's immediate impact is the improvement of coconut terms of trade, indicated by the steady increase of copra and coconut oil prices. Within 10 months after the policy was implemented, the domestic prices of copra and coconut oil rose by 55-56%, respectively. Consequently, the increasing price had stimulated the development of coconut smallholder estates and industries. The significant impact of *Pakjun '91* came from eliminating the inter-island trading tax; the tax for inter-island copra trading decreased to Rp 15/kg and coconut oil decreased to Rp 8/kg. In addition, the imported copra and coconut oil tax tariffs were reduced to 5-10 percent.

In the 1980s to 990s, the impact of *Pakjun '91* regulation, rehabilitation of coconut oil image on the international market, and efforts from the government to improve coconut estates and industries stimulated the smallholders to develop coconut estates. Then, the largest growth of coconut estates and its production occurred in tidal-swamp estates of Indragiri Hilir, Riau.

### **Expansion of Indragiri Hilir's Coconut Estates**

Coconut has been hereditarily cultivated by the Indragiri Hilir community and their main agricultural commodity. Before the entry of the first coconut (coconut oil) processing industry in 1967, the Indragiri Hilir community had relied on rice and coconut cultivation. Even though, the stickiness of coconuts in the pulse of the economy and culture of the Indragiri Hilir community is symbolized as regency logo with rice and coconut.

However, how the coconut estates and agricultural conditions of Indragiri Hilir in the pre-colonial and colonial periods require further research. According to Potter & Badcock (2004), Banjaresse, which dominated the population of Indragiri Hilir, had brought coconut cultivation into this region. In line with it, based on the Indragiri Hilir community's folk story, coconut cultivation was initiated by Mr. Syech Abdurahman Siddiq, a Banjaresse cleric who moved to Indragiri in the late 19<sup>th</sup> century. He was a charismatic cleric who influenced Islamic education in the Indragiri region, which was later appointed by the Sultan of Indragiri as the Mufti of Indragiri Sultanate. According to this story, Syech Abdurahman Siddiq was the initiator to establish coconut estates and the construction of trenches and canals as transportation ways to carry coconut (Plantation Agency of Indragiri Hilir, 2012).

Although in 1980s there was sluggishness in Indonesia coconut estate and trade, it was not happened in Indragiri Hilir. The production and extention were growth steadily and began growth significantly in the 1990s. This period was marked largest extention of Indragiri Hilir's coconut estates. During this period Indragiri Hilir's coconut estates areal extend to 271,32% or almost triple from early 1980s, while coconut production of Indragiri Hilir had growth 553,1%.

### **The Development of Indragiri Hilir Coconut Estates in Pelita 1 and Pelita 3**

During the First Pelita (1970-1975), Government supported coconut development through free seedling distribution by the Provincial Estate Crop Services. The development and extention of Indragiri Hilir coconut estates only conducted by smallholders, and sometimes got help to buy seeds and fertilizes by the regent and provincial government fund (Aswin, interview on November 21, 2018).

In the 2<sup>nd</sup> Pelita (1975 – 1980), the National Planning Agency, Bappenas, had outlined a development approach for Riau Regional Development by defining four general areas: (1) In the western area, around Pekanbaru where agriculture given priority and center for government service, education and trade; (2) The northern sector centered in Dumai as

manufacturing industries and trade area; (3) The southern area around Rengat and Tembilihan which became the basis of food crops and estate development; (4) Tanjung Pinang as a center for trade and manufacturing. The central government was also planning a major effort in tidal irrigation rice fields (*sawah pasang surut*) in Indragiri Hilir, this project expected to comprise some 30.000 ha and some of the lands had made available for transmigration schemes (Esmara, 1975).

Actually, Nucleus Estates Smallholder had been running along in 1<sup>st</sup> and 2<sup>nd</sup> Pelita. But, they were not implemented yet for coconut estates. NES also had been mainly for new settlers (*transmigran*). Then, the government also initiated national programs to assist existing smallholders in replanting rubber or coconuts themselves, with fairly intensive support from Coconut Working Centers (CWC).

During the Second Pelita, 250 units CWC were established in the region that coconut and rubber as the primary commodity. Each CWC stations will cover some 3,000 ha to provide seed stations, research, and technical assistance for farmers (Esmara, 1975). In 1978, there were 20 units CWC station in Indragiri Hilir (Sahduyanto, interview on November 21, 2018). He stated that CWC helped the smallholders' estates to develop their estates, such as selecting seeds, advising about cultivation and irrigation system on tidal-swamp coconut crops.

Before 1979, CWC also worked on Central Government's Project Management Units. This project subsidized seed for the smallholder. CWC bought high-quality probable seeds from smallholder estates and then after several months seeding process, it would be sold in the lower price. CWC bought probable seeds Rp. 25/piece, and then sold them with just Rp. 15/piece (Sahduyanto, interview on November 21, 2018).

During the 1<sup>st</sup> Pelita and 2<sup>nd</sup> Repelita, 575,000 ha (25% of the total smallholder coconut area) were planted under such schemes. However, the crops had suffered from seriously inadequate support services. To deal with this problem, during Repelita III, Government plans to assist the planting and replanting of some 310,000 ha of smallholder coconuts and to rehabilitate 75,000 ha.

Table 2. Major Export of Netherland Indie, 1928 and 1938

	1928		1938	
	Gulden (f)	%	Gulden (f)	%
Sugar	372,000	23,6	45,200	6,9
Rubber	278,018	17,6	130,719	19,9
Petroleum	113,378	7,2	164,018	24,9
Copra	106,491	6,7	38,313	5,8
Tea	98,210	6,2	56,243	8,6
Tobacco	89,085	5,6	33,713	5,1
Tin	87,085	5,5	33,442	5,1
Coffee	81,393	5,2	13,465	2,0
Palm Oil	9,226	0,6	16,527	2,5
Sub Total	1,236,172	78,2	531,660	80,8
Total Exports	1,580,946	100,0	657,749	100,0

Source: Thomas & Panglaykim, 1966.

Table 3. The Shared of Coconut and Palm Oil in Indonesia Market, 1984 -1991

Year	Coconut Oil (%)	Palm Oil (%)
1984	33.6	58.7
1985	40.0	57.1
1986	50.5	43.8
1987	37.9	54.0
1988	32.8	57.8
1989	26.9	67.3
1990	29.1	64.1
1991	29.5	63.1

Source: Dereinda & Susila, 1992.

Table 4. Average Price of Indonesia Copra 1987 – 1995

Year	Price (Rupiah/kg)
1987	433
1988	552
1989	537
1990	351
1991	455
1992	657
1993	525
1994	615
1995	821

Source: BPS RI, 1983.

Then supported by a loan from World Bank, the government launched the Smallholder Coconut Development Project (SCDP) in the late 1970s. The project's main objectives were to increase the incomes of about 40,000 smallholder families; to increase coconut production especially on the outer Islands (not in Java); to reduce imports of coconut oil; and to build the institutional framework for the national coconut development program. This project was then

implemented in the field by CWC officer (Sahduyanto, interview on November 21, 2018).

This project then began in Indragiri Hilir in 1979 and was known as *Proyek Peremajaan Rehabilitasi dan Perluasan Tanaman Ekspor* (PRPTE). Through this project, a smallholder family might received assistance for replantation and development immature trees for less than 2 ha or rehabilitation not more than 5 ha. This project scheme by providing full assistance to smallholders

to develop their estates. Smallholders were given capital to build their estates until the estates were able to produce, and they were provided with long-term soft loans. CWC was also assisting the smallholders from the preparation stage, such as administration and coordination with Bank Rakyat Indonesia and advising smallholders in land clearing and maintenance of the estates.

Smallholders began to repaying loans after the estates can produce until the next 20 years. With assistance from CWC, smallholders just focused on working on their estates, but they could not sell their estates, except for inherited to their heir. After approaching the harvest period (five to seven years), the Bank and the CWC officer would conduct an evaluation. They would be categorized the estates in four grades. Grade A, the estate was successful then the farmer began harvesting and repaying the credit loan; Grade B, the estate was not able to produce and need treatment; Grade C, the estate requires intensive rehabilitation; and Grade D, the estate was failed and not to be continued.

In Indragiri Hilir, PRPTE has been done on three phases of coconut estate extensification: in 1980, 1981, and 1982. After that, the program was only focused on caring and keeping the smallholders' estates. According to Sahduyanto, approximately 70% of coconut estates expansions with this scheme were successful.

#### **Nucleus Estates Smallholder Scheme: The Coconut Estates in Pelita 4 and Pelita 5**

The rapid growth of Indonesian estates in the 1970s to 1990s was inseparable from *Perkebunan Inti Rakyat* (Nucleus Estate Smallholder/ NES). The scheme was a form of cooperation between state-owned or private companies with capital and smallholders who lack capital but can supply plentiful labor. State-owned or private companies (nucleus) prepared plots of land for smallholders located nearby. As these plots matured, usually after three to four years, the operation of the land was transferred to the smallholders (or plasma) who developed the plantations under the supervision of the nucleus companies that are required to purchase their estate production (Hasnah, Fleming & Coelli, 2004). To support this project, the government was loaned by World Bank

and Asian Development Bank (ADB). It applied large private plantations and national plantations company (PT. Perkebunan) which was given the mandate to implement NES program.

NES had been done since 1969. Even so, NES for coconut estates development just began in the 5<sup>th</sup> and 6<sup>th</sup> NES. The 5<sup>th</sup> NES project planned to establish 53,000 ha of tree crops (rubber, oil palm, and coconuts), food crops, and house gardens in West Java, West Kalimantan and Bengkulu provinces with the state-owned plantation companies (PTP XI, XIII, XXIII and PNP VII) as implementation agents. Again, those 6<sup>th</sup> NES projects aimed to establish 28,200 ha of tree crops (rubber and coconuts), food crops, and house gardens in West Java, Bengkulu, and Maluku provinces (World Bank, n.d.). Until 1990, there were 60,336 ha of plasma coconut estates in Indonesia which successfully developed, even though the 5<sup>th</sup> and 6<sup>th</sup> NES were not conducted in Indragiri Hilir.

In 1986, NES program was integrated into resettlement (transmigration) after the new policy issued by Presidential Decree No. 1/1986. The NES-trans program was designed to connect the transmigration scheme for developing tree crops in outer islands of Java. ADB helped the government to develop coconut and cocoa plantations of PIR-Trans scheme in US \$ 340 Million long-term loans (Asian Development Bank, n.d.).

The implementation of the NES-Trans program in Indragiri Hilir collaborated with Sambu Group in which become the first and largest coconut processing company in Indragiri Hilir. Sambu Group established two subsidiary company, PT Riau Sakti Trans Mandiri and PT Guntung Hasrat Makmur. Since 1984, Sambu Group itself had their own hybrid-coconut plantations covering 22,650 ha in Kateman District, which were charged by its another subsidiary company, PT. Riau Sakti.

Since 1990, PT Guntung Hasrat Makmur and PT Riau Sakti Transmandiri began developing hybrid-coconut plantations in the NES-Trans scheme on 64,300 ha of peatland. The plasma estates covered an area of 44,190 ha which was planned to absorb 22,095 households of transmigrant with each household would be received 2 ha of land. Until 2002, there was 44,190 ha of plasma estates had been developed, and absorbed 13,258 households (Fachry, 1998).



Table 5. The Growth of Areal and Production of Coconut Estates in Indragiri Hilir, 1978 - 2001

Year	Area of Estates (ha)				Growth	Production	
	Mature	Immature	Damaged	Total	%	Ton	Growth (%)
1978	80.214	14.008	18.646	122.868	-	66.144	-
1980	82.627	32.783	17.765	133.175	8,66	71.244	7,7
1983	90.636	50.676	22.177	167.429	20,46	78.175	9,73
1985	95.962	51.827	20.521	168.310	0,52	147.781	89,04
1986	96.093	51.806	19.413	168.336	0,015	147.973	0,13
1989	109.171	59.066	25.241	193.478	13	221.111	49,43
1990	188.693	69.459	59.905	318.057	39,17	196.815	-10,99
1991	123.446	69.151	26.672	219.269	-45%	223.826	13,72
1992	188.694	68.989	59.907	317.590	30,96	225.166	0,6
1993	205.188	71.858	75.273	352.319	9,86	257.716	14,46
1995	205.789	74.470	73.736	353.995	0,47	321.843	24,88
1996	205.986	65.581	76.741	348.308	-1,63	322.600	0,23
1997	204.546	67.480	78.651	350.665	0,67	365.956	13,43
2001	273.209	76.342	106.690	456.241	23,14	431.989	18,04

Source: BPS RI, 1983, 1993, 2003.

Table 6. The Growth of Coconut Estates in Indragiri Hilir During the 1st-6th Pelita

	Area (ha)	Production (ton)
Pelita I (1970 – 1975)*	104.684	64.038
Pelita II (1975 – 1980)*	133.175	71.224
Pelita III (1980 – 1985)*	168.310	147.781
Pelita IV (1985 – 1990)*	199.338	223.426
Pelita V (1990 – 1995)*	406.620	338.322
Pelita VI (1995 – 1997)*	432.278	365.965

Source: Plantation Agency of Indragiri Hilir, 2003.

The transmigration program also had contributed to the increasing area for agriculture. During 1971 to 1980, 2.303 households of transmigrant were placed in Indragiri Hilir on the 8.410 Ha, and three-quarters of it had converted into cultivation (BPS Indragiri Hilir, 1978). Then until 1990, there was an addition of another 409 households. So before NES-Trans began in the 1990s, Indragiri Hilir had 2.712 households of transmigrant.

During the Pelita VI (1995 to 1997), there was no new program in coconut estates' development. The government just continued the previous plans. In this period, there was national economic and political turmoil. In 1997 – 1998, the monetary crisis brought the quest for major reformation on the government. Unfortunately, there were no documents that can explain how Indragiri Hilir's coconut estates' conditions in 1998 and 2000 and its influences on the coconut smallholders' estates of the Indragiri Hilir.

However, the Indragiri Hilir estates' statistical data in 1998 - 2000 has been lost.

Overall, since 1<sup>st</sup> to 6<sup>th</sup> Pelita, coconut estates of Indragiri Hilir had growth 327.584 ha, and coconut production had increased to 301.927 Tons (Table 5). Even though there were efforts from the government to expand Indragiri Hilir's coconut estates through several programs, it should be noted. The expansion of coconut estates was mostly conducted naturally by the people of Indragiri Hilir (Table 6).

Surprisingly, the expansion of Indragiri Hilir's coconut estates was dominated by smallholders self-funded. In 1978, there was 122.868 ha of coconut estates, and at this time, neither private plantation company nor national plantation company had established in Indragiri Hilir. PT Riau Sakti United Plantation just opened its plantation in 1984. If it was assumed that the development scheme funded by APBN and APBD had been done at this time, then there were around

121.399 ha. Whereas in 2003, there was 364.303 Ha of smallholders' estates that had been initiated naturally by smallholders. Approximately between 1978 until 2003 there was an addition of 264.904 Ha initiated by smallholders.

### **The Impact of Coconut Industrialization in Indragiri Hilir**

Economists have recognized the interdependency between the agricultural and industrial sectors. In particular, development economists have long focused on how agriculture can best contribute to overall economic growth and modernization. The conventional approach to agriculture's roles in development concentrated on agriculture's critical market-mediated linkages such as providing labor, producing food, enlarging markets for industrial output, and producing primary materials for agro-processing industries (Johnston & Mellor, 1961). Industrialization is often essential for economic growth and long-run poverty reduction (Bleyer et al., 2016).

From the late 1960s until the economic crisis of 1997, Indonesia's economic growth was very rapid, averaging 7% per year. During that 30-year period, the country moved from a predominantly agricultural production base to a more industrialized. The share of agriculture in GDP declined from 56% in 1965 to 16 percent in 1997, and the share of industry increased from 13-44%. However, agriculture remains a very important sector in terms of employment.

In the first to sixth Pelita, the Government's objectives for the agricultural and rural sector were expected to generate significant employment opportunities and to raise the incomes of the rural poor. But the long-term solution to Indonesia's employment problem was primarily depended on the articulation and implementation of a coherent labor-intensive industrialization strategy. However, the national trend on Indonesia economic during Orde Baru's reign did not happen in Indragiri Hilir. From 1990 until 2000, the share of agriculture sector in gross domestic regional product (PDRB) had been increased from 35,34% to 49,15% (BPS Indragiri Hilir, 1978-2017). Basically, it occurred because the rapid growth of the agriculture sector in the 1990s, especially in sub-sector coconut estates. Indragiri Hilir coconut

estates have a long time been as the main supplier of raw materials for the coconut processing industry.

In the 1970s, the government invited private enterprises to establish coconut oil factories in outer Islands of Java. As a result, the number of factory sharply arose to excess demand for copra. the overflow of demand for copra was not equalized by the supply and coconut oil which was steadily substituted by palm oil.

The economic prospect of Indragiri Hilir coconuts had attracted investment to develop coconut processing factory. The first presence of the factory was PT Pulau Sambu that established in 1967 and operated normally at the beginning of the 1970s. Previously, the traditional coconut processing industry had existed in Indragiri Hilir, but it had only developed coconut oil and coconut sugar in small-scale capacities. Until 1995, there were 10 large-scale coconut processing industries in which each of them had production capacity more than 1.000 metric tons.

The whole private coconut processing industries did not have their coconut plantations. So they depended on the supply provided by smallholder coconut estates. In this case, there was an essential relationship between agriculture and industry, where the coconut processing industries were the leading consumer of Indragiri Hilir coconut estates production in addition to copra exports. As the manufacturing coconut industry contributed to multiply value of raw material (Table 7), the value and diversification of the commodity brought economical impact on PDRB.

Multiplier effects are one of the fundamental mechanisms of local and regional development and occur when one type of economic activity affects another. Multiplier effects are driven primarily by market forces. An increase (or decrease) of one type of economic activity in a given city or region prompts an increase (or decrease) in demand for goods and services, which then triggers the development of other types of economic activity in the same region or city (Domański & Gwosdz, 2010). Some empirical works on the regional level had to find substantial growth multipliers from exogenous increases in agri-cultural income. In general, these studies have found the growth multipliers from agriculture to exceed those from non-agriculture (Block & Timmer, 1994).

Table 7. Indragiri Hilir's Major Commodities Export in 1980 to 1997

Year	Copra (metric ton)	Value (US\$)	Coconut Oil (metric ton)	Nilai (US\$)
1980	13.519	1.656.000	5.526	1.577.000
1989	56.457	6.571.393	13.225	6.182.981
1990	84.594	7.934.819	19.028	6.152.066
1991	75.512	7.853.476	15.781	7.580.253
1992	69.511	7.039.133	41.238	22.110.870
1993	64.468	5.553.773	28.465	11.764.268
1996	89.732	10.094.740	69.422	49.904.152
1997	123.675	11.749.066	136.155	85.050.148

  

Year	Cooking Oil (metric ton)	Value (US\$)	Coconut Flour (metric ton)	Nilai (US\$)
1980	N.A	N.A	N.A	N.A
1989	3.815	1.990.863	-	-
1990	-	-	2.024	1.127.764
1991	1.300	780.000	2.955	4.695.252
1992	5.226	2.959.347	8.490	8.245.492
1993	10.043	4.506.200	15.562	12.484.154
1996	7.595	5.885.318	25.052	22.318.303
1997	14.014	9.961.264	28.964	27.180.066

Source: Plantation Agency of Indragiri Hilir, 1995, 1997; BPS Indragiri Hilir, 1982.

On the contrary in 2005, a research conducted by Postgraduate School of Institut Pertanian Bogor found that coconut sector of Indragiri Hilir had indicated regional losses, especially at the large-scale processing industry caused by the capital outflow of both employment and capital incomes to other regions (Aris, Juanda, Fauzi, & Hakim, 2017). This study is one of the keys to solve about contrasting phase that currently happened in the coconut economic commodity of Indragiri Hilir.

In addition to large-scale industries, there were also hundreds of small-scale coconut processing industries. They were processed product such as coconut oil, coconut sugar, or other coconut products, although they just produced it on small capacities. The small-scale copra industries known by local inhabitant as *langkau* processed coconut to be dried coconut kernel (copra). After being harvested, mostly large-scale coconut oil industries or exporter did not accept coconut fresh fruits, but they prefer to collected copra. So, this economic role for transform coconut to copra had been taken by *langkau*. Then, coconut sugar industries usually produced by the traditionally household industries. Another kind of coconut small-scale

enterprise was copra trading collector or known as *tokeh/tauke*.

Coconut processed products were the main export commodities of Indragiri Hilir. During the 1980s to 1990s, the number of volume and value of Indragiri Hilir's export had risen sharply. It caused by the addition of coconut processing factories and the expansion of coconut estates during this period. Beside contributing to the increased demand for coconut, the presence of large-scale industries also positively affects the development of Indragiri Hilir's coconut estates. Several economists have studied how the geographic concentration of industries facilitates knowledge 'spillover' between firms and thereby enhances the diffusion of innovations. Like industries, regions grow because their inhabitants interact and learn from each other. Knowledge gained by one firm, for example, may benefit other firms, primarily those in the same industry. Sjöholm, in his research about productivity growth in Indonesia's manufacturing sector, found that regional characteristics at the regency level, rather than at the province level, seemed to explain productivity growth. At the district level, a diversified industry structure increases productivity growth substantially (Sjöholm, 1999).

The exchange of knowledge in Indragiri Hilir's coconut plantation was found between large-scale plantation and smallholder estates to develop a cropping system in the tidal-swamp area of Indragiri Hilir. Coconut plantation in the tidal swamp area is a unique model. The effect of the tide and water level is necessary for the utilization of coconut land. The tidal swamp area is about stagnant water when the tide comes or when rainfall; the stagnant water might disturb coconut crops growth and productivity (Darwis, 1990). Contrary, the coconut farmer in Central Java and Yogyakarta used Surjan System cropping model for dealing with this problem; the idea is the soil around the coconut tree need to be heightened than the water between the coconut rows is used for fish, prawn, crab farms, or duck farm, or for lowland rice.

Indragiri Hilir estates have their cropping system that has been implemented since a long time ago. To solve the stagnant water among the crops caused by tidal, the farmer-built dikes or canals between the coconut rows, and every canal connect to a prime canal with a valve to control flowing water off the estate (Sahduyanto; Interview in November 21, 2018). This cropping system also prevents exceeded evaporation on the peatland during the dry season. Inspired by this cropping system model, large private company plantation adopted and developed a large irrigation system that consists main canals, secondary canals, and tertiary canals along more than 3,000 Km and used the valve to control water distribution to the whole part of the plantation.

## Conclusion

Although coconut estates sub-sector had not given a significant contribution to Indonesia Gross National Product, they had the important role in term of absorbing employee. The rapid growth of Indragiri Hilir coconut estates during the 1980s – 1990s caused by several attempts from the government to revive coconut commodities. During 1<sup>st</sup> – 6<sup>th</sup> Five Years Development Program (Pelita), the government launched several program and policies to stimulate the development of coconut smallholder, copra trading, and coconut processing industries.

The programs that had launched for coconut estates in 1980s – 1990s, including: Smallholder Coconut Development Project, *Proyek Peremajaan Rehabilitasi dan Perluasan Tanaman Ekspor* (Project Planting, Replanting and Rehabilitation Export Tree Crops/ PRPTE), Nucleus Estate Smallholder (NES), Nucleus Estate Smallholder Transmigration (NES-Trans), and the local government donation. In addition, the government also liberalized copra trading by launching Pakjun 1991 regulation which made copra trading export and import taxation decreased and also cut intra-island taxation. For long term development, since 1970s the government invited investment to establish factories. All policies, programs, and regulations that had launched by Indonesia government influenced the interest of coconut smallholders to expand the coconut estates.

However, in Indragiri Hilir, among several schemes and attempts from the government to develop smallholder coconut estates, the significant growth of them was mostly initiated naturally by smallholders itself. During the 1970s – 1990s, the increasing demand for coconut in Indragiri Hilir had been caused by large-scale coconut processing industries' growth. Both the synergy development between agriculture and industry had supported the growth of coconut estates. Then the growth of agriculture sector was more leading than manufacture sector on the share of Gross Domestic Regional Product during 1990 – 2000, mostly it was caused by the rapid growth of coconut estates in Indragiri Hilir.

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