

The Green Economics in PT Sinar Mas Agro Resources and Technology Tbk (PT SMART Tbk.)

Muhammad Hakim Haekal and Muhammad Eka Pramudita

Abstract—Oil palm (*Elaeis sp.*) is an important industrial plant producing cooking oil (palm oil), the oil industry, as well as fuel (biodiesel), and others. Plantations make a huge profit so many old plantation forest and converted into oil palm plantations in Indonesia. In 2012 Indonesia was the first palm oil producer in the world. Palm oil plantations generate waste from solid to liquid waste. Volume of solid waste in oil palm plantations is quite large, derived from the leaves, stem, and bunches. In facing the challenge of Rio G+ 20, the green economics is essential. Waste utilizations are essential. This utilized waste can be used for animal feed and fertilizer sources of organic mass used in palm oil plantations. Therefore, this paper is a case study on one of the largest palm oil companies in Indonesia, namely PT SMART Tbk. The study covers the total CPO production, total revenues; total waste generated, and waste utilization. Descriptive data and quantitative data used to support our research in statistics. The conclusion shows PT SMART Tbk practices the green economics to sustain the business in palm oil business.

Index Terms—Palm oil, coconut oil, green economy, PT SMART Tbk., CPO, biodiesel, Rio G+ 20.

I. INTRODUCTION

Palm oil is a popular source of vegetable fat for the production or processing of palm oil is high in the countries of Southeast Asia, and even palm oil became the major agricultural commodities and seeded in Indonesia, in addition to coconut oil. It was due to several factors, among others, source of income for millions family mainly farmers, source of foreign exchange, benefits from plantation activities, generates value added manufacturing, opens marketing its products[1]. The excellent performance of employers' competencies, best practice of plantations and efficient palm oil processing industry are the central spur economic growths. These drivers of growth recently developed the downstream processing industries based CPO (Crude Palm Oil) in Indonesia such as butter, cookies, glycerin, soaps, and detergents [2].

Indonesia has become a major producer of palm oil in the world with production of 20 million tons of CPO with an average growth of 10-12%. It has provided economic benefits to companies in agro industry with several million small farmers up to large land owners. However, this growth sometime has to sacrifice rainforests and peat lands are converted into palm oil plantations [3].

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Muhammad Hakim Haekal is with Agribusiness Department, Institut Pertanian Bogor (Bogor Agricultural University), (e-mail: hakim_haekal@hotmail.com).

Muhammad Eka Pramudita is with food science technology department, Institut Pertanian Bogor (Bogor Agricultural University), he is studying in (e-mail: mepramudita@gmail.com).

In facing the challenge of Rio G+ 20, the green economy approach is expected to be the solution. Green economy can also be used in the face of many challenges, injustice, and the negative impact of the implementation of the economic approach or conventional development [4].

Green economy can only be practiced on the basis of a number of awareness. The first is the realization that environmental damage is more severe and need rehabilitation now. Based on calculations British economist Sir Nicholas Stern, if the world improves the environmental damage now, the money needed just 1% of global gross domestic product. However, if delayed, the world had to pay 20% of the global GDP. Second was the realization that environmental stewardship can improve economic welfare. In a recent report, the UN shows how emissions reductions can spur economic growth [5].

It could take a sample of Europe and Central Asia have the highest emission reduction of 28% in the period 1990-2008 and in the same period, GDP in both regions increased 22%. UN judges that success is the result of changes in energy prices, including gasoline subsidized. Valorization has encouraged energy savings. The UN also believes green economic policies impact on poverty reduction in the Pan-European. The UN noted that since 1990, 90 million people or 18% of the total population there has been out of the poverty line [5].

We analyze the oil palm company PT SMART Tbk which uses a green economics strategy in its production. Increased production of several years of delivering the impact of waste produced, so that the green economics strategy is used in utilizing the waste generated which can give a good impact on the PT SMART Tbk itself and the surrounding environment.

II. METHODS

A. Data and Source

- Primary data was taken from observation. Methods of data collection through direct observation of the object of the research. The data was taken by interviewing the Research and Development Division of PT SMART, Tbk.
- Secondary data was taken from PT SMART Tbk. website in internet that showing the annual report of PT SMART Tbk itself. Also, we having some study literature from books, scientific journals, and internet to find the right concepts of green economics strategies and its component. As for the theories that we use comes from the books introductory management science and other sources.

B. Methods

- Descriptive

We using the descriptive methods in order to explain and determine the total production, total revenue, and the green economics use of PT SMART Tbk. In terms of this, we use those data to get the impact of development of the production and the recovery of the impact by using green economics.

- Quantitative

Quantitative data were taken to know the performance of PT SMART Tbk for this several years based on numbers. We collected the statistics data to measures the development of PT SMART Tbk and to measure the use of green economics of PT SMART Tbk itself.

III. RESULT AND DISCUSSIONS

A. Performance of PT SMART Tbk

PT SMART Tbk is one of the largest producers of palm oil-based consumer goods listed, and one of the largest in Indonesia, which is committed to the production of sustainable palm oil. Founded in 1962, SMART's palm plantations have a total land area of approximately 135,000 hectares (including small holders). SMART also operates 15 mills, four kernel crushing plants, and three refineries. SMART listed its shares on the Indonesia Stock Exchange in 1992[6].

SMART principal business activities consist of the cultivation and harvesting of oil palm, processing of fresh fruit bunches into crude palm oil ("CPO") and crude palm kernel ("CPKO"), and refining PO ("RBDPO") into value-added products such as cooking oil, margarine and shortening. In addition to the production of bulk and industrial oils, SMART's refined products are also marketed under several brands such as Film, Palm Boom, and Kunci Mas. Now, these brands are known for their high quality and command significant market share in their respective segments in Indonesia [7].

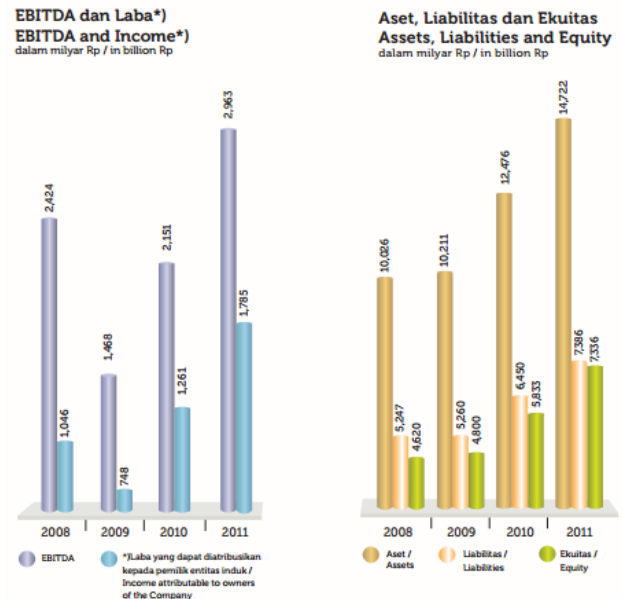
SMART is a subsidiary of Golden Agri-Resources (GAR), one of the largest palm-based companies in the world which is listed on the Singapore Exchange. SMART also manages all oil palm plantations with a total area GAR plantations in Indonesia covering an area of 430,200 hectares (including small holders) on March 31, 2010[8]. Relations with GAR benefit SMART with its economies of scale 'in plantation management, information technology, research and development, sourcing of raw materials, and access to an extensive network of marketing, both domestically and internationally.

- Assets

The total assets grew by Rp 2.25 trillion or 18%, reaching Rp 14.72 trillion as of 31 December 2011[8].

Current assets totaled Rp 7.96 trillion at end of 2011, 27% higher than the previous year of Rp 6.24 trillion. The increase was attributable to higher trade accounts receivable, cash and cash equivalents as well as inventories. Trade accounts receivable as at end of 2011 was Rp 3.26 trillion. More than 98% of these receivable were due in less than three months. Rising trade accounts receivable corresponded to the increase in CPO market prices and were in line with the higher sales of the Company. Noncurrent assets grew by

8% to Rp 6.76 trillion as at end of 2011 from Rp 6.24 trillion in 2010. The increase mainly resulted from additional facilities at our refineries in Marunda, West Java and Tarjun, South Kalimantan [7].



Source: Kementan.org

Fig. 1. EBITDA and Income; Assets, Liabilities, and Equity of PT SMART Tbk

- Liabilities

Total liabilities increased by Rp 886 billion to Rp 7.39 trillion as at 31 December 2011, primarily attributable to the increase in noncurrent liabilities. Noncurrent liabilities were recorded at Rp 3.12 trillion, 30% higher than last year of Rp 2.39 trillion. Meanwhile current liabilities were recorded at Rp 4.27 trillion, 4% higher than last year's balance. The increase in noncurrent liabilities was mostly due to additional shareholder's loan. Most of our debts are US dollar denominated. As of 31 December 2011, our gearing remained at a healthy level, with net debt to equity ratio of 0.59 and EBITDA to interest ratio of 10 times [7].

Laporan Laba Rugi Komprehensif Konsolidasian (Rp Milyar)	2011	2010	2009	2008	2007	Consolidated Statements of Comprehensive Income (Rp Billion)
Penjualan bersih	31,676	20,265	14,201	16,102	8,080	Net sales
Laba kotor	7,522	3,137	1,717	3,763	2,225	Gross profit
Laba usaha	2,472	1,667	1,110	2,141	1,663	Income from operations
Laba sebelum bunga, pajak, depresiasi dan amortisasi (EBITDA)	2,963	2,151	1,468	2,424	1,885	Earnings before interest, taxes, depreciation and amortisation (EBITDA)
Laba (I)	1,785	1,261	748	1,046	989	Income (I)
Rata-rata tertimbang jumlah saham beredar (juta saham)	2,872	2,872	2,872	2,872	2,872	Weighted average number of shares (million shares)
Laba usaha per saham (Rp)	861	581	387	745	579	Income from operations per share (Rp)
Laba per saham dasar (Rp)	621	439	261	364	344	Basic earnings per share (Rp)

Source: smart-tbk.com

Fig. 2. Consolidated Statements of Comprehensive Income of PT SMART Tbk

CPO dihasilkan (ton)	709,077	625,335	640,264	534,988	509,095	CPO produced (tonnes)
PK dihasilkan (ton)	157,990	139,218	141,500	119,266	111,637	PK produced (tonnes)
OER (%)	23.22	23.09	23.50	23.31	23.33	OER (%)
KER (%)	5.17	5.14	5.19	5.20	5.12	KER (%)
Lokasi perkebunan (hektar)						Plantation locations (hectares)
Sumatra						Sumatra
Inti	40,721	41,132	41,254	39,505	39,210	Nucleus
Plasma	24,270	24,260	23,815	23,349	23,200	Plasma
Total Sumatra	64,991	65,392	65,069	62,854	62,410	Total Sumatra
Kalimantan						Kalimantan
Inti	67,891	67,457	66,207	63,910	61,234	Nucleus
Plasma	6,077	5,245	3,202	2,053	1,546	Plasma
Total Kalimantan	73,968	72,702	69,409	65,963	62,780	Total Kalimantan

Source: smart-tbk.com

Fig. 3. Total production of CPO at PT SMART Tbk

In the palm oil industry, the parent company of SMART's parent company, GAR, has been leading the industry in palm oil productivity. By 2015, GAR aims to achieve an average CPO yield of 5.8 tonnes per hectare and 5.6 tonnes per hectare for smallholders, from oil palms in the prime age of 7-18 years. This would represent a 12% increase from the average CPO yield GAR achieved in 2010[8]. The average CPO yields for the Indonesian industry and Indonesian smallholders in 2010 were 3.8 tonnes per hectare and 3.4 tonnes per hectare respectively. SMART is committed to taking a multi-stakeholder approach toward developing and implementing the YIP. The consultations aim to provide a platform for all stakeholders to share experiences and challenges with regard to increasing productivity in the palm oil industry in order to move the industry forward in sustainable palm oil production[8].

Together with the Indonesian Oil Palm Seed Producers Association, smallholders and government bodies, SMART promote the use of seeds that are derived from selected highly productive oil palms. As approximately 30,300 hectares or 22% of SMART's plantations belong to smallholders, increasing the productivity of these plantations is crucial[7]. SMART also share their knowledge and development of skills through training on best agricultural practices such as optimal use of fertilizers and application techniques, integrated pest management, health and safety, and other agronomic support and also we are committed to implementing tight control over the use of chemical pesticides. We have been applying alternative methods of managing pests and diseases that affect oil palms. The preferred method is to deploy biological controls, such as beneficial plants, natural predators and pathogens or bacteria, and handpicking or mechanical traps. Pesticides are deployed only to control outbreaks of infestation when biological controls are not successful.

Besides educating plasma smallholders on the optimal usage and application of fertilisers, SMART help to supply good quality fertilisers to them. Since fertilisers account for a major part of the operation cost, SMART also allow them to pay in affordable instalments.

Our research institute, SMARTRI, continues to push the frontiers of innovation to enhance productivity of palm oil production in our estates as well as in smallholdings. An ongoing project involving the research units of a dozen Indonesian palm oil producers to breed palm oil seeds that are disease resistant, drought tolerant and productive is making good progress[8].

Another significant project involving SMARTRI is the Oil Palm Genome Project. The main objective is to map the entire genome spectrum of oil palm varieties, including identification of specific traits such as disease resistance, drought tolerance, superior quality oil, and high yield[7].

B. The Green Economics Strategies

SMART overall approach towards sustainability. As part of this process, SMART is always looking for ways to increase productivity.

Leading in Sustainability Development YIP focuses on best practices in corporate seeds, agronomic practices, farm management, and land suitability.

SMART as an environmentally friendly company using the accreditation of ISO 9001:2008 and ISO 17025, as well as external laboratory referred to by the authorities of the Government of Indonesia as the measurement of environmental parameters. SMART conduct surveillance and periodic internal audits based on ISO 14001:2004 Environmental management systems and 9001:2008 on quality management systems [8].

Production strategies SMARTRI implanted using the concept of reuse, recover and recycle. SMARTRI reuse all production waste as organic fertilizer and energy sources. For example, the use of back palm empty fruit bunches and liquid waste treatment plant that is rich in nutrients to the garden as organic fertilizer. And has been investing in technology to convert methane gas produced from the nutrient-rich waste into energy. In addition, solid waste from palm oil processing plant, such as fibers of the mesocarp of palm oil, used as fuel.

In addition, soil fertility monitoring conducted periodically throughout the plantation. One way to implement strict control over the use of pesticides which was later replaced with the preferred alternative method is biological control, beneficial plants, natural predators and pathogens or bacteria, as well as taking a hand or mechanical traps. Pesticides used to control pests in bulk and when biological control does not work.

Working closely with TFT in conservation (Conservation Policy), an international non-profit organization based in Geneva. Forest conversion policy is intended to conserve forests and ensure that SMART has a zero deforestation footprint, while creating a long-term sustainable growth for the company and the palm oil industry. SMART also launched Social policy and Keberperanan Community (Social and Community Engagement Policy) to ensure that the operations of oil Geneva-based international NGO[6]. Also launched a policy of increasing productivity (yield improvement policy) using technology and innovation to increase production of CPO in order to help improve the lives of farmers, and at the same time will reduce the pressure on the opening of new land.

GAR is working with TFT to help the company prepare for RSPO certification of the 433 200 hectares of oil palm plantations and palm oil mills 42 (as of June 2010) until December 2015[8]. Certification of palm oil facilities acquired after June 30, 2010, will be part of a separate plan.

SMART also supports schemes Indonesian Sustainable Palm Oil ("ISPO"). ISPO is the measures taken by the Ministry of Agriculture of Indonesia to improve the competitiveness of the Indonesian palm oil in the world market and to meet Indonesia's commitment to reduce greenhouse gas emissions and to focus on environmental issues.

The entire clearing land using manual techniques such as land leveling using a bulldozer and a pile of trees, thus

TBS dihasilkan (ton)	2010	2011	2012	2013	2014	FFB harvested (tonnes)
Inti	2,200,553	1,977,461	1,972,085	1,676,382	1,688,383	Nucleus
Plasma	541,605	475,066	487,127	408,806	336,627	Plasma
Total TBS dihasilkan	2,742,158	2,452,527	2,459,212	2,085,188	2,025,010	Total FFB harvested
Rata-rata hasil TBS (ton per ha)	21.9	19.8	20.9	19.6	21.1	Average FFB yield (tonnes per ha)

Source: smart-tbk.com

Fig. 4. FFB harvested at PT SMART Tbk

preventing air pollution, and maintain soil structure and nutrients during the decomposition of biomass. Protect areas of high conservation value SMART support efforts to preserve the HCVs. HCV assessments compared with best practice and included in the management plan for the development of plantations. If needed, SMART appoint external experts to provide input in the assessment of HCV. If found HCV in the plantation area, SMART will take the following steps to increase the value of natural resources and biodiversity in these areas:

- Maintain the flora and fauna, especially endangered species, to protect from the threat of illegal activity such as illegal logging;
- Avoid degradation and deterioration;
- Review the management plan to conserve HCV sustainable and
- Oversee and enrich the regular HCV or rehabilitated, if necessary. Diversity of flora and fauna in the plantation maintained by preserving habitat adequately. An example is the commitment to preserve important orangutan. SMART has also signed a two-year partnership program with the Orangutan Foundation International to better support the conservation and protection of orangutans. SMART environmental impact monitoring on a regular basis to manage and supervise all aspects of the environment in order to minimize negative impacts on the environment. Supervision is based on the Environmental Management Plan and Environmental Monitoring Plan, in accordance with the document analysis.

IV. SUSTAINABILITY

The economic and social development of the community is crucial to the development of Indonesia as a whole. SMART employs local labour as much as possible in plantations, mills and estates. SMART also makes an effort to employ local enterprises and builds up local businesses to create a thriving community and economy in areas where operates. In addition to direct employment, SMART economic activity has a multiplier effect that supports many other people who benefit directly and indirectly from the plantations, mills and estates. For example, the presence of Smart plantations allows the surrounding communities to organize a weekly traditional market where local people can sell their products to SMART employees. These activities generate additional income for the local communities who consequently enjoy better access to basic education and health. SMART has not sought to measure this multiplier activity in the past but expect to provide more effected in future. One example of this multiplier effect is Blacksmith Training Program in Kandis at Siak Regency area of Riau Province. This cooperation with 21 local blacksmiths has improved the livelihoods in the area.

SMART community initiatives in 2010 included assistance to the Government of Indonesia in executing its cooking oil programme by producing and distributing almost 33,000l of “Minyakita” branded cooking oil. SMART recognize that the price of food staples for the poor is a vital issue. As part of efforts to assist the poor, we have been running Operasi Pasar (Market Operation), a programme that SMART initiated in Indonesia in mid-2007

when the prices of commodities, especially cooking oil, started to increase. Under this programme, sell SMART branded cooking oil at a subsidized rate (15%-25% lower than the market price) in the rural and under-developed areas in Indonesia, mainly in Jakarta, Sumatra, Kalimantan and several cities in Java Island. As at end 2010, SMART had distributed almost 750,000 liters of cooking oil through Operasi Pasar[9].

SMART provides employment for about 157,000 people in Indonesia, of whom 41,000 are permanent employees, 64,000 are smallholders and 52,000 are casual workers on plantations. For SMART, community acceptance and support are the foundation for sustainable growth. Developing good community relations is central both to SMART business and our aspirations of contributing to the economic and social development of Indonesia [9].

SMART social and economic impacts are spread across the full breadth of value chain: from the production of palm oil to the manufacturing and sale of products, and then through to the wider community. SMART initial socio-economic impacts are employment generation and creation of demand for support services in operations, which results in the engagement of suppliers and contractors. These are direct impacts on the lives of those engaged in our operations. However SMART social and community programs have even wider impacts on society, as does the effect of the economic multiplier process and the use of products by our business customers and brand consumers, as shown in Chart below.



Source: goldenagri.com

Fig. 5. The scope of the economic and social impacts

Education is a pillar of our community development programs. SMART sees education as a key to unlocking the potential of Indonesia and as an effective way to break the poverty cycle that affects many of its people.

Through SMART education programs, also supports the Government of Indonesia’s human resource development efforts in building a high quality human capital. To date, we have established 198 schools that employ 1,774 teachers and educate 33,195 students, ranging from kindergarten to junior high. In support of the nine years of compulsory education as stipulated by the Indonesian Ministry of Education, SMART have ensured that each estate has educational facilities for kindergarten to sixth grade schooling and every region a junior high school that adequately meets the needs of SMART employees and the local communities[10].

	2009	2010	2011
Schools	129	141	198
Students	21,776	23,370	33,195
Teachers	1,080	1,149	1,774

Source: goldenagri.com

Fig. 6. SMART school portfolio

V. SUMMARY

In conclusion, PT SMART Tbk is one of the largest producers of palm oil-based consumer goods listed, and one of the largest in Indonesia, which is committed to the production of sustainable palm oil. SMART has increased the total production from year to year as well as increased revenues from year to year. Palm oil industry gives a bad impact on the environment and there is also a lot of waste is generated. Therefore, SMART uses green economic strategy to overcome all these problems. RIO G+ 20 also supports the green economy. After knowing and analyzing SMART green economic strategies, the reasons why this company get a big profit and give good influences to its environment, it is because of the green economic strategies. SMART use organic inputs, wastes cultivate, build social and yield policies, and empower people in its environment. These green economic strategies provide also a sustainable activity for the surrounding community and environment.

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Muhammad Hakim Haekal was born at Pontiank, December 24th 1991. He is an undergraduate student in agribusiness department, faculty of economics and management at Institut Pertanian Bogor (Bogor Agricultural University), Indonesia. It is a third year of his study. He had published articles with the title “EFS (Effective Farmer’s Store : A Multifunctional Solution To Improve The Welfare Of Spinach Farmers with Small Land” in and “The Uniqueness of The Marketing System of Maichih Chips” in IPEDR vol.15 (2011) © (2011) IACSIT Press, Singapore



Muhammad Eka Pramudita was born at Jakarta March 31st 1993 .He is undergraduate student in Food Science and Technology department at Institute Pertanian Bogor (Bogor Agriculture University). He’s in second year at Institute Pertanian Bogor.