



GREEN PRODUCTIVITY AND SUPPLY CHAIN PERFORMANCE IN THE COCOA AGROINDUSTRY

DIANAWATI



AGROINDUSTRIAL ENGINEERING STUDY PROGRAM
FACULTY OF AGRICULTURAL ENGINEERING AND TECHNOLOGY
IPB UNIVERSITY
BOGOR
2024



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SUMMARY

DIANAWATI. Green Productivity and Supply Chain Performance In The Cocoa Agroindustry. Supervised by NASTITI SISWI INDRASTI, ANDES ISMAYANA, INDAH YULIASIH and TAUFIK DJATNA.

The cocoa agroindustry plays an essential role in the Indonesian economy and contributes to many stakeholders who depend on the industry for survival. The fact that the Indonesian cocoa agroindustry is currently in a less-than-ideal condition is indicated by its low productivity. The green productivity approach is an approach with environmental aspects so that Indonesian cocoa products are more competitive. This study aims to improve green productivity and supply chain performance in the cocoa agroindustry in Lampung. The keywords in this study include cocoa agroindustry, global value chain, life cycle assessment, green productivity, and Lampung.

The study aims to investigate the specific problems and needs of the cocoa industry to meet international market standards. In addition, this study also attempts to analyze the potential for implementing green productivity in the cocoa agroindustry and formulate strategies for its improvement. By conducting life cycle measurements, this study measures the carbon footprint of cocoa production and identifies opportunities to reduce emissions. Evaluation and improvement of the performance of the cocoa agroindustry supply chain in Lampung were carried out using the SCOR and AHP models.

The research questions to be answered in this dissertation include: How can a comprehensive approach be used to analyze problems and needs in improving the competitiveness of the cocoa agroindustry in the international market? How can applying the green productivity concept reduce the environmental impact of cocoa production activities in Lampung? What factors affect the performance of the cocoa agro-industry supply chain, and how can the efficiency and infrastructure of the supply chain be improved?

The research methodology used includes a combination of qualitative and quantitative methods. Global value chain analysis (GVC) is used to understand the dynamics of the worldwide cocoa industry, while life cycle assessment (LCA) emits the environmental impact of cocoa production. Green productivity index (GPI) measurements are carried out to assess resource efficiency and environmental impacts. In addition, SCOR and AHP models are applied to measure and improve supply chain performance.

The main findings of this study indicate that Indonesian cocoa products have a significant comparative advantage in the international market, especially in cocoa bean products and certain processed cocoa products. The life cycle assessment identified that energy use and carbon emissions are the main factors affecting the environmental performance of the cocoa industry. The application of green productivity strategies has been shown to improve resource efficiency and reduce environmental impacts, with several specific recommendations, including using renewable energy and better waste management. The supply chain evaluation shows that several high-cost points must be optimized to improve supply chain efficiency and termination.



The implications of this study provide a framework for developing a long-term strategy in the cocoa agroindustry, which is expected to improve the competitiveness of Indonesian cocoa products in the international market. In addition, the results of this study can be used by policymakers to support sustainable practices in the cocoa industry and stakeholders in the supply chain to improve productivity and viability. This study also adds to the scientific literature on green productivity and supply chain performance in the agroindustry, providing significant theoretical and practical contributions.

Keywords: AHP analysis, cocoa agroindustry, comparative advantage, global value chain (GVC), green productivity, life cycle assessment (LCA), SCOR model, supply chain performance

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RINGKASAN

DIANAWATI. Produktivitas Hijau Dan Kinerja Rantai Pasok Pada Agroindustri Kakao. Dibimbing oleh NASTITI SISWI INDRASTI, ANDES ISMAYANA, INDAH YULIASIH dan TAUFIK DJATNA.

Agroindustri kakao tidak hanya memainkan peran penting dalam perekonomian Indonesia, tetapi juga berkontribusi pada banyak stakeholder yang bergantung pada industri tersebut untuk bertahan hidup. Fakta agroindustri kakao Indonesia saat ini berada dalam kondisi yang tidak ideal, ditunjukkan oleh produktivitas yang masih rendah. Pendekatan produktivitas hijau merupakan pendekatan dengan aspek lingkungan, agar produk kakao Indonesia lebih kompetitif. Studi ini bertujuan untuk meningkatkan produktivitas hijau dan kinerja lingkungan di agroindustri kakao di Lampung. Kata kunci dalam penelitian ini mencakup agroindustri kakao, rantai nilai global, penilaian siklus hidup, produktivitas hijau, dan Lampung.

Penelitian bertujuan untuk menyelidiki masalah dan kebutuhan spesifik industri kakao agar dapat memenuhi standar pasar internasional. Penelitian ini untuk menganalisis potensi penerapan produktivitas hijau di agroindustri kakao serta merumuskan strategi peningkatannya. Dengan melakukan penilaian siklus hidup, penelitian ini mengukur jejak karbon dari produksi kakao dan mengidentifikasi peluang untuk mengurangi emisi. Evaluasi dan peningkatan kinerja rantai pasok agroindustri kakao di Lampung dilakukan dengan menggunakan model SCOR dan AHP.

Pertanyaan penelitian yang ingin dijawab dalam disertasi ini meliputi: Bagaimana pendekatan komprehensif dapat digunakan untuk menganalisis masalah dan kebutuhan dalam meningkatkan daya saing agroindustri kakao di pasar internasional? Bagaimana penerapan konsep produktivitas hijau dapat mengurangi dampak lingkungan dari aktivitas produksi kakao di Lampung? Apa saja faktor yang mempengaruhi kinerja rantai pasok agroindustri kakao dan bagaimana cara meningkatkan efisiensi dan keberlanjutan rantai pasok tersebut?

Metodologi penelitian yang digunakan mencakup kombinasi metode kualitatif dan kuantitatif. Analisis rantai nilai global digunakan untuk memahami dinamika industri kakao global, sementara penilaian siklus hidup digunakan untuk mengevaluasi dampak lingkungan dari produksi kakao. Pengukuran indeks produktivitas hijau (IPH) dilakukan untuk menilai efisiensi sumber daya dan dampak lingkungan. Selain itu, model SCOR dan AHP diterapkan untuk mengukur dan meningkatkan kinerja rantai pasok.

Temuan utama dari penelitian ini menunjukkan bahwa produk kakao Indonesia memiliki keunggulan komparatif yang signifikan di pasar internasional, terutama pada produk biji kakao dan produk olahan kakao tertentu. Penilaian siklus hidup mengidentifikasi bahwa penggunaan energi dan emisi karbon merupakan faktor utama yang mempengaruhi kinerja lingkungan industri kakao. Penerapan strategi produktivitas hijau terbukti dapat meningkatkan efisiensi sumber daya dan mengurangi dampak lingkungan, dengan beberapa rekomendasi spesifik termasuk penggunaan energi terbarukan dan pengelolaan limbah yang lebih baik. Evaluasi rantai pasok menunjukkan adanya beberapa titik biaya tinggi yang perlu dioptimalkan untuk meningkatkan efisiensi dan keberlanjutan rantai pasok.



Implikasi dari penelitian ini memberikan kerangka kerja untuk mengembangkan strategi keberlanjutan di agroindustri kakao, yang diharapkan dapat meningkatkan daya saing produk kakao Indonesia di pasar internasional. Hasil penelitian ini dapat digunakan oleh pembuat kebijakan untuk mendukung praktik berkelanjutan dalam industri kakao, serta oleh pemangku kepentingan di rantai pasok untuk meningkatkan produktivitas dan keberlanjutan. Penelitian ini juga menambah literatur ilmiah tentang produktivitas hijau dan kinerja lingkungan di agroindustri, memberikan kontribusi penting baik secara teoritis maupun praktis dalam bidang ini.

Kata kunci: agroindustri kakao, analisis AHP, keunggulan komparatif, kinerja rantai pasok, model SCOR, penilaian siklus hidup (LCA), produktivitas hijau, rantai nilai global (GVC)

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DIANAWATI

Dissertation
as partial fulfillment of the requirements
for the degree of Doctor
in
the Agroindustrial Engineering Study Program

**AGROINDUSTRIAL ENGINEERING STUDY PROGRAM
FACULTY OF AGRICULTURAL ENGINEERING AND TECHNOLOGY
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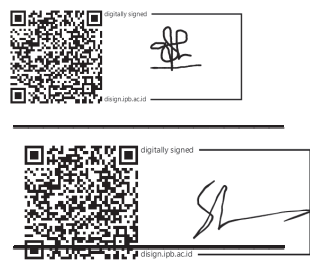
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ACKNOWLEDGEMENT

Alhamdulillah Robbil 'Aalamiin. The author completed this dissertation with Asma Allah, the Most Gracious and Most Merciful, for His Love. For this reason, the author expresses his gratitude, Alhamdulillahirobbilalamin, while expressing all praise to Allah, the Lord of the worlds, who has taught humans the Qalam, with the completion of this dissertation, which is one of the academic requirements for obtaining a Doctorate in the Agricultural Industrial Engineering Study Program, IPB University. The title of this dissertation is "Green Productivity And Supply Chain Performance In The Cocoa Agroindustry of Lampung." I express my gratitude and thanks to:

1. Prof. Dr. Ir. Nastiti Siswi Indrasti, Dr. Ir. Andes Ismayana, MT, Dr. Indah Yuliasih, STP, MSi, Prof. Dr.Eng.Taufik Djatna,S.T.P,M.Si, as the supervisor, was assigned to support and guide patiently to the author during the preparation of this dissertation completion.
2. Prof. Dr-Ing. Ir. Suprihartini and Dr. Teja Primawati Utami, S.TP, MM, a team of examiners and reviewers, have provided meaningful suggestions for the perfection of my dissertation.
3. Vice-rector of IPB for education and student affairs (Prof. Dr. Deni Noviana) and Prof. Ferry Kusnandar as friends in the alumni association of SMAN 1 Bogor, Dean of the Faculty of Agricultural Technology (Prof. Dr. Ir. Slamet Budijanto, M.Agr.), Head of the Study Program of Agroindustrial Engineering (Prof. Dr. Ir. Illah Sailah, M.S.), along with the ranks and all teaching staff, and administration who have provided study opportunities by providing all facilities and services to me while attending the Doctoral Program Education at IPB University.
4. My lovely Husband, Dedi Rafizal, and Son, Dzaky, for prayers, motivation and emotional support.
5. My big family from the Saimun Saari family (Bogor) and Tengku Zulkarnain family (Medan) have motivated and supported me by providing moral support.
6. My postgraduate colleagues from the Study Program of Agroindustrial Engineering, class of 2020 (Sari, Dewi, Ati, Rohayati, Aina, Sri Kaida, Nurlaili, Teddy, Rinda, and Pak Rudi), and All of group Sensei who have provided support and motivation during my lectures, research, and preparation of my dissertation.
7. My colleagues in the Ministry of Trade, Mrs. Frida Adiati, Mrs. Novianti Wulandari, Winarno, Seto, Zulfikar, especially the PTS Team (Desi, ima, Ardhy, Nugi, Sugeng, Indy, Budi) and all Certification bodies PPMB personnel who have provided support and motivation during my Study at IPB university.
8. My Friends in Alumni FPIE at the Indonesian University, especially EKPI-2, Yessi, and Yenni, have provided support and motivation during my studies at IPB University.
9. Irma Rahayu and the EHI Community have provided support and motivation during my studies

10. Sabrina Mustopo, friend and owner of PT Aneka Coklat Kakoa, and all her employees who have helped to be part of this research
11. Not to forget, I would like to thank all parties who have supported me while researching and writing this dissertation, including colleagues, friends, and all parties whom I cannot mention individually. Support, encouragement, and prayers have all been essential to my journey.

I hope this scientific work helps add references to literature studies, especially on scientific material. May Allah SWT always bestow His grace and guidance on all of us. Especially myself. Writing this dissertation is not the end of my scientific journey but rather the beginning of a contribution that I consider helpful for developing science and society. I hope that what I have written in this dissertation can make a meaningful contribution to science.

Finally, I hope this dissertation can be accepted and benefit all interested parties. Hopefully, this hard work can become a field of worship and bring blessings to all of us.

*The Prophet Muhammad SAW said: "**Bind knowledge by writing it down.**" (Saheeh Al-Jami', no. 4434. Shaikh Al-Albani said this hadith is authentic).* Rosulullah's words became a reflection and provocation for the writer regarding the importance of expressing knowledge and knowledge in written form, such as this dissertation.

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2. Dilarang mengumumkan dan memperbanyak sebagian atau seluruh karya tulis ini dalam bentuk apapun tanpa izin IPB University.

Perpustakaan IPB University