POLICY NATIONAL MEDIUM-TERM DEVELOPMENT PLAN IN SUPPORTING A GREEN ECONOMY IN INDUSTRIAL SECTOR IN INDONESIA

(Case Study of Coal Mining in Indonesia)

1st Rismanto
post graduate
tadulako university
palu, central sulawesi
rismanto160983@gmail.com

2nd Sitti Munifah
post graduate
tadulako university
palu, central Sulawesi
sittimunifah@gmail.com

3rd M. Ilham Jaya Pernama
post graduate
tadulako university
palu, central Sulawesi
ilhamjayapernama@gmail.com

4th Ardin
post graduate
tadulako university
palu, central Sulawesi
ardinbanget@gmail.com

5th Sri Rahayu Husen
post graduate
tadulako university
palu, central Sulawesi
srirahayuhusen01@gmail.com

Green growth in Indonesia, in principle is a sustainable development (Sustainable Development Goals). Growth in the economic field cannot be separated from the position of industrialization. Industrial zones are a major contributor to economic development in Indonesia. This study aims to analyze the National Medium Term Development Plan (RPJMN) Policy in Supporting a Green Economy in the Industrial Sector in Indonesia (Case Study of Coal Mining in Indonesia). This aims to determine the importance of a Green Economy in the Industrial sector, especially the Coal Mining Industry, to support the economy in Indonesia and to encourage growth in a more advanced economic sector.

This research produces an analysis in the form of efforts and solutions in responding to the RPJMN policy in supporting a Green Economy to support the economy, especially in the industrial sector in Indonesia so that it is more advanced. This study uses a sample of the coal industry spread across several regions in Indonesia. The types of data used are primary and some are secondary. The method used is the DEA method (Data Envelopment Analysis) and SWOT analysis. This study finds that the 2020-2024 RPJMN document can be considered as a momentum for the state's commitment to implementing green economy management in Indonesia, by setting environmental development as one of the development goals. (Abstract)

Green Economy Policy, RPJMN, Coal Industry *(key words)*

I. INTRODUCTION

Economic growth cannot be separated from the position of industrialization. The industrial zone is a major contributor to the development of the Indonesian economy (Kuswana & Hakim, 2016). The Central Bureau of Statistics shows that the percentage of industrial zone donations to Indonesia's economic development is 20.7%. For the United Nations Statistics Division, Indonesia itself ranks fourth out of 15 countries in the world, with the manufacturing industry's contribution to Gross Domestic Product (GDP) of more than 10 percent in 2016 (Alya P. Rany, 2020). This economic growth can be seen from the results of data collection from the Central Statistics Agency for the second semester of 2022, the Indonesian economy in the second quarter of 2022 compared to the first quarter of 2022, grew by 3.72 percent. Growth occurred in almost all business fields, except for construction, which contracted by 6.05 percent. Business fields that experienced significant growth were Agriculture, Forestry, and Fisheries by 13.15 percent and Government Administration, Defense and Social Security by 9.28 percent (Arizqi et al., 2022). Meanwhile, Mining and Quarrying Business Fields; Wholesale and Retail Trade, Repair of Cars and Motorcycles; and the Processing Industry which has a dominant position each experienced a growth of 3.56 percent; 2.17 percent; and 0.04 percent. Furthermore, some of the large growing business fields include Learning Services by 7.43 percent; Transportation and Warehousing by 6.78 percent; and Provision of Accommodation and Food and Drink amounting to 4.94 percent.

II. CONCEPTUAL

Green growth in Indonesia, in principle, is a sustainable development goal (Sustainable Development Goals), and has been proclaimed since the Rio Conference in 1992, and has become a strategic issue in the National Medium Term Development Plan (RPJMN) document. President Susilo Bambang Yudhoyono specifically called for a change in the economy to a green economy. The Green Economy concept was formalized in 2008 by the United Nations Environment Program (UNEP). This economic concept states that income and employment growth is influenced by public and private investment that leads to reducing carbon emissions and pollution, increasing energy sources resources efficiently and prevent the loss of diversity in natural ecosystems (Parmawati, 2019). This needs to be supported by changing laws and regulations or policies that are more environmentally friendly (Haryu, 2017). In addition, there is a strong commitment from policy makers to always carry out concrete steps as a form of national development strategies and policies to create independent, advanced, just, and prosperous Indonesian citizens by always observing conditions in good condition (Lako, 2015).

In this research, it is devoted to the 2020-2024 National Mid-Term Development Plan (TTPHAM, 2017). Based on previous research related to the industrial sector in green economy policies, there is a reference (Iskandar, 2019), stating that the United Nations Agency (UN) in the Living Area Program, United Nations Environment Program (UNEP), in its report entitled Towards a Green Economy defines a Green Economy or Green Economy as an economic concept that can improve welfare and social justice. There are 3 (three) things that are observed in this concept , namely low carbon, socially inclusive, and resource efficient. The Green Economy wants to reduce the negative impact of economic development on the area and the scarcity of natural energy sources (Kristianto, 2020). So in simple sentences, the Green Economy can be referred to as an economy that is low in carbon (does not create emissions and environmental pollution), saves natural energy sources and is socially equitable, which in the RPJMN itself is discussed in the Partnership Partnership Book. The National Medium-Term Development Plan (RPJMN) is a document that translates the President's vision and mission, as well as five-year development policies and programs, and is linked to the National Long-Term Development Plan (RPJPN). Since the first term of President Susilo Bambang Yudhoyono until the second term of President Joko Widodo, the RPJMN document has consistently included aspects of economic development and social welfare as the development agenda. The 2020-2024 RPJMN contains an important commitment to environmental management, including environmental sustainability, as one of the development agendas that is in line with other development agendas. The RPJMN 2020-2024 can be seen as a national development plan that openly recognizes climate change as one of the main elements considered in developing development options and scenarios. Rodrik et al. (2002) found that the quality of institutions is the main factor that explains economic development. Therefore, green economic development (Green Economic Development) is a strategic approach in realizing the welfare of an inclusive society. The RPJMN policy in the green industry is closely related to the commitment of the Government of Indonesia in the global agenda in 2030 to achieve sustainable development goals (SDGs) and deal with climate change with a target of reducing greenhouse gas emissions by 29%. Several government policies that are manifested in the form of regulations in following up on green economy programs, especially those related to social and environmental responsibility for companies, have been regulated in Law No. natural resources, in order to carry out social and environmental responsibilities whose implementation is regulated in Government Regulation number 47 of 2012.

Based on the description above, the core problem of this study is the Analysis of the RPJMN Policy in Supporting a Green Economy in the Industrial Sector in Indonesia (Case Study of Coal Mining in Indonesia). This aims to find out the importance of a Green Economy in the Industrial sector, especially the Coal Mining Industry, to support the economy in Indonesia and encourage growth in an economic sector that is more advanced, stronger and can realize sustainable development in Indonesia in the future. In relation to one of the objectives of the RPJMN, namely increasing Economic growth is strongly influenced by one of the factors of Gross Domestic Product (GDP). Based on the results of the

Central Statistics Agency for the second quarter of 2022, there are 17 business fields that drive GDP, one of which is in the mining and quarrying industry sector which will be the sample in this study. The coal sector greatly influences green development in Indonesia. Coal has a significant role in energy supply in Indonesia, especially in the electricity sub-sector. The 2020-2024 RPJMN states that the electrification ratio in Indonesia has reached 98.3% in 2018. This achievement is supported by the expansion of the electricity distribution network, as well as the development and utilization of new and renewable energy (EBT).

III.   METHOD

The analysis of the green industry in this study uses a sample of the coal industry spread across several regions in Indonesia. The industry is clustered large, medium and small based on the total value of the company's assets. Due to limited resources and time, the process of collecting data from the sample is carried out by monitoring the green industry programs that have been carried out or that will be launched by several companies in question through the official website of each company. The next stage uses the SWOT method to analyze more deeply the green industry strategy, especially in the type of coal mining industry.

The types of data used in this study are primary and secondary. Primary because in obtained directly from the first source (not through intermediaries), or through the official website.

Later, primary data will be collected based on assessment criteria, such as economic performance, income, production quality, raw materials and production results (30% weight), environmental performance consisting of energy efficiency programs, biodiversity, waste and emission management (40% weight), as well as social performance such as employees, CSR and community participation (weight 30%). Industrial companies that can meet every aspect of the assessment with a percentage above 90%, can be categorized as companies that have implemented the principles of a green industry in a sustainable manner. Furthermore, the type of secondary data obtained is based on trusted institutions such as BPS, Ministry of Industry, Ministry of Environment and Forestry, and others.

DEA (Data Envelopment Analysis) serves to measure the efficiency of an organization that involves many inputs and many outputs (multi input multi output) (Sutawijaya & Lestari, 2009). The Data Envelopment Analysis (DEA) method is a non-parametric analysis method specifically used to measure the efficiency of an economic activity unit called the Decision Making Unit (DMU) (Firdaus & Hosen, 2014). The DEA method is able to analyze many inputs and many outputs using a linear program to produce a single efficiency value for each Decision Making Unit (DMU). The essence of the DEA method is basically to determine the weight or scale of each DMU input and output which is not negative and is universal.

The principle of a non-parametric approach using the DEA method was first introduced by Farrell (1957). However, Farrell's idea did not receive widespread attention. In its development, this method was later developed by Charnes, Cooper, and Rhodes (1978) who gave rise to the term Data Envelopment Analysis (DEA). The DEA model developed by Charnes, Cooper, and Rhodes (1978) is known

as the CCR model. In its analysis, the CCR model uses the assumption of constant return to scale (CRS) where the ratio of the addition of inputs and outputs is the same. In 1984, Banker, Charnes, and Cooper developed a model called the BCC model. In contrast to the CCR model, this BCC model uses the assumption of a variable return to scale of 30 (VRS), namely the ratio of the addition of inputs and outputs is not the same. The ratio of adding input and output can be in the form of increasing return to scale (IRS) or decreasing return to scale (DRS) (Tuffahati et al., 2019).

There are two orientations used in the efficiency measurement methodology, namely the input orientation which sees efficiency as a reduction in the use of inputs despite producing a fixed amount of output. Suitable for industries where managers have great control over operating costs. Output Orientation Perspective that sees efficiency as a proportional increase in output using the same input. Suitable for industries where the decision-making unit is given a fixed quantity of resources and asked to produce as much output as possible from these resources.

This study also uses a SWOT analysis based on the concept of David (1993). Through a SWOT analysis, it will help in the final conclusion of the study. The SWOT analysis uses an internal factor evaluation (IFE) matrix and an external factor evaluation (EFE) matrix, where IFE includes strengths and weaknesses and EFE includes opportunities and challenges (Setyaningsih, 2018). Figure 1 shows eight boxes, namely the two boxes on the left display external factors (opportunities and threats), the top two boxes display internal factors (strengths and weaknesses) and the other four boxes represent strategic issues that arise as a result of a meeting between external and external factors. internally (Noor, 2014).

IFAS / EFAS	Strength (S) Strength Factors Internal	Weakness (W) Weakness Factors Internal
Opportunity External Opportunity Factors	Strategy SO Create strategies that use strengths to take advantage of opportunities	Strategy WO Create strategies that minimize weaknesses to take advantage of opportunities
Threat Factors External Threat	Strategy ST Create strategies that use strength to overcome threats	Strategy WT Create strategies that minimize weaknesses and avoid threats

Image 1
SWOT analysis

There are five steps in developing an EFE, namely:

1. Write down the external factors that become the company's opportunities and threats. Use the 10 – 20 most important external factors that affect the company and its industry. Write down the company's opportunities first then the company's threats. Try to be as specific as possible using percentages, ratios and comparison figures.

2. Give each factor a weight in the range of 0.0 (not important) to 1.0 (very important). The weight given to a factor shows its relative importance to determine success in the company's industry. Opportunities often get a higher weight than threats, but threats will also get a higher weight if there are factors that are very threatening. Reasonable weights are determined by comparing successful competitors with unsuccessful ones. The sum of all the weights must be equal to 1.

3. Assign a rating of 1 to 4 to each factor to indicate that the factor has no impact (rating = 1), has an impact (rating =

2), has a small impact (rating = 3), has a large impact (rating = 4). The rating is given based on the state of the company, while the weight in step 2 is based on the state of the industry.

4. Multiply each weight of the factor by the rating to determine the weight value for each variable.

5. Add up the weighted values for each variable to determine the total weighted score for the organization/company. The highest total weighted score is 4.0 and the lowest is 1.0 with an average of 2.5. If the company weighs below 2.5 the company is considered weak in external factors, whereas if the company weighs above 2.5 then the company is in a strong external condition.

IFE is a tool to summarize and evaluate the main strengths and weaknesses in various functional areas of a business, this matrix also provides a basis for recognizing and evaluating the relationships among these fields (Chrismastianto, 2017). The IFE matrix can be explained through five assessment steps as follows: Write down the factors that are the company's strengths and weaknesses. Use the 10 – 20 most important internal factors. Write down the company's strengths first then the company's weaknesses. Try to be as specific as possible using percentages, ratios and comparison figures :

1. Give each factor a weight in the range of 0.0 (not important) to 1.0 (very important). The weight given to a factor shows its relative importance to determine success in the company's industry. Factors that are considered to have a major influence on organizational/company performance are given the highest weight value. The sum of all the weights must be equal to 1.

2. Give a rating of 1 to 4 on each factor to indicate that the factor has major weakness (rating = 1), minor weakness (rating = 2), minor strength (rating = 3), major strength (rating = 4). The rating is given based on the state of the company, while the weight in step 2 is based on the state of the industry.

3. Multiply each weight of the factor by the rating to determine the weight value for each variable.

4. Add up the weighted values for each variable to determine the total weighted score for the organization/company. If the total weighted value is far below 2.5 then the company is weak internally, whereas if the total weight is above 2.5 then the company is in a strong internal position (Sugeng Prasetyo, 2021).

Table 1
Research Sample

Industry	Type Industry	Industry Name	Location/Link
Mining Coal	Big	PT.Andaro Energy, Tbk	Jakarta, https://www.adaro.com/
	Big	PT. Indika Energy	Jakarta, https://www.indikaenergy.co.id/id/
	Currently	PT.Bukit Asam	South Sumatera, https://www.ptba.co.id/berita/berita-csr-lingkungan (berkelanjutan)
	Currently	PT.Bayan Resources, Tbk	South Jakarta, https://www.bayan.com.sg/ (CSR)
	Small	PT. Baramulti Sukses Sarana	Jakarta, http://www.bssr.co.id/index.php
	Small	Mitrabara Adiperdana	Central Jakarta, https://mitrabaraadiperdana.co.id/

Table 1. shows there are 6 industries used in this study as a sample. Industrial locations in Jakarta and South Sumatra. Category Type of industry from the six samples, based on the value of the company's assets, asset value >= 50 Trillion (Large), asset value >25T<50T (Medium), and Asset Value

<=25T (Small). These samples will be analyzed whether they are in the Green Economy Category or Not.

IV. RESULT AND DISCUSSION

Efficiency is the added value produced by an industry with the inputs used in the form of labor, raw materials, capital and others. Efficiency in production cannot be separated from the allocation of inputs in production. A company is said to operate efficiently if there is a reallocation of factors of production in order to increase the production of one good without reducing the production of other goods. Measurement of industrial efficiency or inefficient is measured by a relative measure. If there is a tendency to increase efficiency from year to year, it can be classified as an efficient industry and if there is a decrease in efficiency, it can be said that the industry is not efficient or inefficient.

Efforts to analyze the external and internal environment of the implementation of the green industry, especially in the coal sector, are important to do. The external environment consists of all conditions, both opportunities and threats that will affect strategic choices, as well as determining the implementation situation. The internal environment will describe the quantity and quality of human, financial and physical resources for program managers. The internal environment will also assess the strengths and weaknesses of the management and organizational structure of implementing the green industry implementation program.

Table 2
SWOT Matrix Analysis (IFAS) National Medium-Term Development Plan Policy in Supporting a Green Economy in the Sector Industry in Indonesia (Case Study of Coal Mining in Indonesia)

No.	Internal Aspect	Weight	Rating	Score
1.	**Strength**			
	- There are reports of activities related to the green	0,27	4	1,08
	- Industry - There is a green industry certification body -	0,24	4	0,96
	- There is a green industry performance appraisal program	0,19	4	0,96
				2,80
2.	**Weakness**			
	- The synergy of the green economy management program with the Central Government and Local Governments is still low	0,15	2	0,3
	- The health condition of employees during the pandemic is still low	0,08	2	0,16
	- Lack of knowledge and awareness of the importance of green economy in supporting sustainable programs	0,07	2	0,14
				0,60

Based on Table 2 above, it is identified that the National Medium-Term Development Plan Policy in Supporting a Green Economy in the Industrial Sector in Indonesia (Case Study of Coal Mining in Indonesia), shows an IFAS value of 3.40 which is contributed by a score of Strength of 2 .80 and the value of weakness (weakness) of 0.60. The main strength indicator values possessed by several coal industries are the existence of activity reports, certification bodies and Green Industry performance assessment programs. Meanwhile, the weaknesses include the low synergy of the green economy management program with the Central Government and Regional Governments, the health condition of employees during the pandemic is still low, and the lack of knowledge and awareness of the importance of the green economy in supporting sustainable programs.

Table 3
SWOT Matrix Analysis (EFAS) National Medium Term Development Plan Policy in Supporting a Green Economy in the sector Industry in Indonesia (Case Study of Coal Mining in Indonesia)

No.	Eksternal Aspect	Weight	Rating	Score
1.	**Opportunity**			
	- There are regulations and policies that support the green industry - There	0,29	4	1,16
	- Are rewards and punishments related to the implementation of the green industry	0,17	3	0,51
	- There is a budget allocation for CSR to support the green industry program	0,21	4	0,84
				2,51
2.	**Threat**			
	- There has been a change in the leadership of program	0,11	2	0,22
	Implementers - Low awareness of the green industry community -	0,11	2	0,22
	- Geographical constraints and access to information	0,11	2	0,22
				0,66

Based on Table 3 above, it is identified that the National Medium-Term Development Plan Policy in Supporting a Green Economy in the Industrial Sector in Indonesia (Case Study of Coal Mining in Indonesia), shows an EFAS value of 3.17 contributed by the Opportunity score of 2 .51 and the Threat value of 0.66. The main indicator values owned by Coal Companies in various Provinces of the Territory of Indonesia, There are regulations that support the green industry, There are rewards related to the implementation of the green industry, and there is a budget allocation for CSR to support the green industry program. Meanwhile, the existing challenges include a change in the leadership element of the program implementer, the low awareness of the green industry community, and Geographical Obstacles and access to information.

Table 4
IFAS Matrix and EFAS National Medium Term Development Plan Policy in Supporting a Green Economy In the Industrial Sector in Indonesia (Case Study of Coal Mining in Indonesia)

IFAS / EFAS	Strength (S)			Weakness (W)		
Opportunity	Strategy SO			Strategy WO		
	2,80 +	2,51	= 5,31	0,60 +	2,51	= 3,11
Threat	Strategy ST			Strategy WT		
	2,80 +	0,66	= 3,46	0,60 +	0,66	= 1,26

Based on Table 4 above, it can be seen that the National Medium Term Development Plan Policy in Supporting a Green Economy in the Industrial Sector in Indonesia (Case Study of Coal Mining in Indonesia) is in the SO Strategy with a value of 5.31 and the WO Strategy with a value of 3.11, where in This condition has great power to seize potential opportunities by trying to minimize weaknesses that occur, through increasing the issuance of new regulations in the form of policies for business people, especially in supporting the green industry.

Based on the results of the SWOT analysis that has been done, it illustrates that the strengths and opportunities are greater than the existing weaknesses and threats. The position of the implementation of the green industry in several regions of Indonesia is in the Quadrant I (growing) region. This position illustrates that a growth strategy for implementing green industries is very possible because strengths are greater than weaknesses and opportunities are greater than threats. Furthermore, the results of the quadrant on the SO, ST, WO and WT strategies can be seen in the following figure:
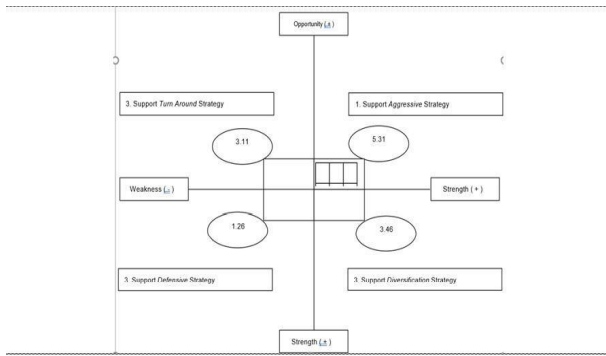
Figure 2
SWOT Analysis of IFAS and EFAS Matrix National Medium Term Development Plan Policy in Support Green Economy in the Industrial Sector in Indonesia (Case Study of Coal Mining in Indonesia)

From the results of this analysis, it can be seen that industrial management, especially related to coal mining in supporting the Green Economy, has a growth strategy because it is caused by strengths including reports and certification of green industry implementation in each of the sample companies that are continuously improved and have strong weights and values. This is supported by opportunities that can be seen from the external matrix of evaluation results which also have a significant influence, mainly from the regulatory and policy aspects as well as budget allocation for the implementation of the Green Economy. This shows the elaboration of the RPJMN in the form of government policies in the form of reporting, certification, reward punishment and budget allocation for the implementation of the green industry is the main prerequisite for a company, especially in business fields related to natural resource management.

CONCLUSION

This study finds that the RPJMN 2020-2024 document can be considered as a momentum for the country's commitment toimplementing green economy management in Indonesia, by setting environmental development as one of the development goals. This effort is strengthened by the commitment that is formulated through the policies and regulations of the Government of Indonesia which requires the implementation of green industries in the management of companies.

In order to ensure that the implementation of sustainable development in the context of economic growth and equitable distribution of social welfare can run in a balanced manner, the government should encourage the following:

1. The Green Economy can be replicated in every regional development plan throughout Indonesia by compiling technical guidelines for the preparation of regional RPJMD documents. based on a green economy.

2. Conducting program synergy with the Central Government and Regional Governments with companies for industrial application green.

3. Provide education to create public and stakeholder awareness regarding the importance of a green economy for sustainable development.

REFERENCES

[1] Alya P. Rany, SA (2020). INDONESIA'S CHALLENGES IN REALIZING STRONG ECONOMIC GROWTH AND SUSTAINABLE ECONOMIC DEVELOPMENT THROUGH THE INDONESIA GREEN GROWTH PROGRAM BY BAPPENAS. Journal of Economics and Development Sciences 63-73.

[2] Arizqi, S., Afida, R., Nehaputri, T., Setiawan, R., & Andre, E. (2022). Analyzing Economic Growth In Indonesia From Various Important Sectors As A Reference To Improve Future Development. SNHRP, 407–416. https://snhrp.unipasby.ac.id/prosiding/index.php/snhrp/article/view/ 336

[3] Haru, A. (2017). Towards Democratic Global Development: Wangari Maathai's Critique of the Global Development Discourse. Indonesian Journal of International Relations, 1(2), 70–89. https://doi.org/10.32787/IJIR.V1I2.31

[4] Kristianto, H. (2020). SUSTAINABLE DEVELOPMENT GOALS (SDGs) IN THE CONCEPT OF GREEN ECONOMY FOR QUALITY ECONOMIC

[5] GROWTH BASED ON ECOLOGY. Business, Economics and Entrepreneurship, 2(1), 27– 38. https://doi.org/10.46229/BEE.V2I1.134

[6] Kuswana, D., & Hakim, A. (2016). The impact of industry on shifting socio-cultural values of society: A descriptive study in Cipendeuy District & Purwadadi District, Subang Regency.

[7] Parmawati. (2019). Economic Valuation of Natural Resources & Environment Towards a Green Economy - Rita Parmawati - Google Books. https://books.google.co.id/books?hl=en&lr=&id=xJPP DwAAQBAJ&oi=fnd&pg=PR7&dq=Concept+econo my+ini+menyat will+that+growth+income+and+labour+labour+influen ced+by+investment+parties+society+and+private+whi ch +leads+to+reduction+emissions+ka

[8] Purwanto, R. (2020). ACCELERATION OF IMPLEMENTATION OF BUREAUCRACY REFORM IN DISTRICT/CITY GOVERNMENTS FOR THE PERIOD OF 2020 - 2024. Administrative pulpit, 17(2), 84–103. https://doi.org/10.56444/MIA.V17I2.1781

[9] Sugeng Prasetyo, A. (2021). IMPLEMENTATION OF GREEN ECONOMY POLICIES IN SEVEN SMALL AND MEDIUM INDUSTRIAL SECTORS EAST JAVA. Journal of Economics and Business, 25(1), 1– 13. https://doi.org/10.24123/JEB.V25I1.4717

[10] TTPHAM, MM (2017). REDD+ and Green Growth: synergies or discord in Vietnam and Indonesia. International Forestry Reviews, 19, 56-68.