

## Implementation of a Palm Oil Based Biofuel Policies in the Realization of Sustainable Development in Musi Banyuasin District

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### Abstract

*This research intends to analyze the implementation of policies, factors that influence the implementation of oil palm-based biofuels in Musi Banyuasin District, to further formulate a model for implementing policies related to renewable energy. Research uses qualitative descriptive methods with an inductive approach. Research data obtained through interviews, observations and document tides. The results of the research findings were identified: 1) Implementation of the biofuel policy is quite good where the policy through the development program of the natural product processing industry and downstream industry, revitalization and replanting of plantation land, data collection on smallholder plantations, agrarian reform, and development pays attention to environmental impacts and climate change; 2) factors that influence the successful implementation of policies namely regional leadership determination, support from actors in the target environment. While the factors that influence the failure of policy implementation are the absence of SOPs, budget shortages, weak coordination, and uneven political will; and 3) The Sustainable Renewable Energy Policy Implementation Model consists of dimensions of the policy context, implementing context, policy objectives, and sustainability consensus.*

### Keywords

Implementation; public policy; renewable energy



## I. Introduction

Energy for a nation-state has a very strategic meaning in the process of development, management and sources obtained both from fossil energy and from sustainable energy are influenced by the perspective on energy. The direction of Indonesia's energy policy in the future must undergo a fundamental change, so far energy has only been used as a source of foreign exchange, not yet a development capital aimed at independence, such as ensuring energy availability and meeting the needs of domestic energy sources, optimizing the management of domestic energy resources in an integrated manner and sustainable, improve the efficiency of energy use, and ensure fair and equitable access to energy for all people.

In this case, how to realize the implementation of new and renewable energy to ensure national energy security and independence, as well as positioning new and renewable energy as capital for sustainable development. This agenda can at least support the national economy in developing and strengthening the position of industry and trade, support and develop national capabilities in the field of new and renewable energy to be more competitive at the international level, ensure the efficiency and effectiveness of the availability of new and renewable energy as an energy source and as raw material. for

domestic needs, ensuring public access to new and renewable energy sources, developing and adding value to new and renewable energy resources.

The important thing in the process of implementing the realization of new energy is how to develop new and renewable energy sources that are more efficient and able to be developed by the community as a source of renewable energy raw materials. The development of one of these energies is certainly based on the existing potential and can be improved, managed in a sustainable manner. One of the potentials that can be developed as new and renewable energy is Palm Oil.

Alternative use of palm oil derivative materials to become a renewable energy source continues to be studied by several competent parties which based on studies and research from the Bandung Institute of Technology (ITB) since the last few years have conducted research which can develop palm oil as fuel. Vegetables become green diesel, green gasoline and bioavtur. Studies and collaborations between ITB and Pertamina have resulted in several co-processing techniques for palm oil with the Red and White catalyst.

In July 2020 the Minister of Industry Agus Gumiwang Kartasasmita made a working visit to see directly at PT Pertamina Refiner Unit II Dumai Riau Province, in the trial of processing 100% Refined Bleached Deodorized Palm Oil (RBDPO) to be processed into green diesel on a standalone basis with a catalyst Merah Putih, this is a step forward from the Government in developing the green diesel industry which is one of the government's programs to increase the class of oil palm farmers as the main stakeholder of the national palm oil industry, "meaning that this program will provide more welfare for oil palm farmers. In addition, the mandatory biodiesel program, including B30, has been consistently designed to prevent the decline in global CPO prices due to the global oversupply phenomenon (Sulaeman, 2020). The economic condition of the population is a condition that describes human life that has economic score (Shah et al, 2020). Economic growth is still an important goal in a country's economy, especially for developing countries like Indonesia (Magdalena and Suhatman, 2020).

The target that must be met in the integration of new and renewable energy is by 2025 it is at least 23% (twenty three percent), and in 2050 at least 31% (thirty one percent). This is an opportunity as well as a challenge from the government in its operation.

In addition to the government which must carry out the function of developing new and renewable energy, of course, the regional government must also carry out the functions carried out to fulfill renewable energy, as mandated by Article 18 which states that regional governments in accordance with their authority are obliged to carry out energy diversification. Energy diversification is carried out at least by accelerating the provision and utilization of various types of new energy sources and renewable energy sources.

By looking at the data on the number of household heads (KK) who depend on palm oil for their livelihoods, the government should think about policies on the direction of oil palm plantation development in Indonesia. This not only provides income for oil palm farmers, amounting to ± 50 million Indonesians, it also brings in large foreign exchange of around ± 300 trillion, which is donated to support the nation's economy in the midst of economic conditions that continue to depend on several sectors, especially oil and gas and tourism.

In addition, the policies taken must pay attention to development aspects that prioritize the function of environmental sustainability, where the land use process, increased productivity by implementing plant management and organism control, increasing the capacity of planters who continue to be optimized, more trusted planter institutions, land fires, management of peatlands, as well as plantation relations with surrounding communities in joint collaboration in sustainable development plans.

By knowing the challenges above, of course, solutions or solutions to these problems can be formulated so that stakeholders will get references in order to minimize the things that become obstacles in implementing a policy related to meeting energy needs from palm oil and sustainable development.

Some research phenomena that occur in the field include the government's not yet optimal commitment and attention in developing new and renewable energy, seen from the very far reaching target of the renewable energy mix of 23% in 2025, but until 2019 it has only reached 9.15%. This means a difference of 13.85% which must be met until 2025.

The fulfillment of energy needs is not yet optimal and the dependence on energy imports is still high, as seen from the need for domestic fuel including biodiesel, reaching 465.7 million barrels/year which can only be met by domestic production of an average of 278.1 million barrels/year. The rest is met from imports which reach an average of 165.4 million barrels/year or 35% of the total national demand.

The utilization of domestic energy sources is not optimal yet to meet energy needs and as development capital, even energy sources tend to be used as materials to earn foreign exchange, seen from the export volume of palm oil and its derivatives of 29,672,000 tons/year with an export value of 18,232 million USD or equivalent to 273 trillion, but the huge potential of palm oil is not utilized to cover the 13.85% shortfall in the palm oil-based renewable energy mix.

There has not been a common perception between the central government and local governments in the development of palm oil-based renewable energy, seen from the export volume of palm oil and its derivatives of 29,672,000 tons/year which continues to be massively promoted in 200 districts/cities while local governments must develop renewable energy. pay attention to the welfare of smallholder farmers, as well as environmental sustainability.

Public policy implementation (policy implementation) is a further process from the policy formulation stage. At the formulation stage, the strategy and policy objectives are set, while the actions to achieve the objectives are carried out at the policy implementation stage. According to Nugroho, in practice, the purpose of the policy is to intervene in principle, therefore the actual implementation of the policy is the action of the intervention itself. In developed countries, generally a policy is debated at the time of formulation in parliament because the community is included so that once the policy has been issued there is no longer debate in society, while in developing countries, debate only occurs at the time of implementation, because the people are not included in parliament. (Nugroho, 2016).

Another definition of policy implementation, namely: Understanding what actually happens after a program is declared valid or formulated. The focus of attention on policy implementation is the events and activities that arise after the adoption of state policy guidelines which include both efforts to administer and create them. (Wahab, 2004). Meanwhile in the aspect of stages, policy implementation is the stage of policy making between policy formation and the consequences or consequences of policies on the affected target group. (Winarno, 2002).

Policy implementation is not only a mechanism for translating policy objectives into routine procedures and techniques, but further than that, it involves various factors ranging from resources, relationships between organizational units, bureaucratic levels to certain political groups that may do not agree with the policies that have been set. (Koswara, 2001). Similarly, the analysis of policy implementation tries to study the causes of the success or failure of public policies, through a discussion of the factors that influence policy implementation, such as leadership issues and political interactions among policy implementers. (Santoso, 1998).

A deep understanding of the perceptions of the target group is very important for central officials, because it allows them to anticipate political feedback and is sensitive to the behavioral assumptions that underlie programming. Political feedback is needed by the government regarding the continuity of a government. In this regard, Surbakti said there are two reasons why legitimacy is important for government leaders, first, because legitimacy will bring political stability and possibilities for social change. In a difficult situation, a government that has legitimacy from the community will solve problems more than a government that lacks legitimacy. Second, legitimacy will open wider opportunities for the government to not only expand the welfare areas to be addressed, but also to improve welfare. (Surbakti, 1992).

## **II. Research Method**

This study used qualitative research methods. Qualitative research is intended as a type of research whose findings are not obtained through statistical procedures or other forms of calculation. (Anselm Stauss and Juliet Corbin, 2013). The purpose of qualitative research is to seek to present the social world, and its perspective in the world, in terms of the concepts, behaviors, perceptions and issues about the human being studied. (Moleong, 2009).

It is also stated that: Qualitative research explores attitudes, behavior and experiences through such methods as interviews or focus groups. It attempts to get an in-depth opinion from participants. As it is attitudes, behavior and experiences which are important, fewer people take part in the research, but the contact with these people tends to last a lot longer. (Dawson, 2010).

The purpose of qualitative research is to understand the social phenomena of a particular event and social interaction. According to the opinion of Locke Spirdoso & Silverman, the purpose of qualitative research is to understand certain situations, events, groups or social interactions. (Cresswell, 2012).

One of the characteristics of qualitative research as described above is to use inductive data analysis, where conclusions are drawn in general from individual problems. Drawing conclusions inductively is done by bringing together the specific and limited scope of questions and then ending with general questions.

Qualitative data analysis activities consist of three streams of activities that occur simultaneously, namely data reduction, data presentation and conclusion drawing/verification. Occurring simultaneously means data reduction, data presentation and conclusion drawing/verification as something that is intertwined is a cyclical and interactive process before, during and after data collection in parallel form to build general insights called analysis. (Matthew B. Miles and A. Michael Huberman, 2009).

## **III. Results And Discussion**

The great potential of oil palm plantations in South Sumatra Province has emerged in line with the government's incessant discourse to make oil palm plantations the main raw material for biofuels. The area of oil palm plantations in South Sumatra reaches 1.2 million hectares, which grows more than an average of 4% per year. From these statistics, South Sumatra ranks third on the island of Sumatra which has the largest plantation area, as well as at the national level, South Sumatra ranks sixth. Musi Banyuasin Regency itself is in first place as an area that has the largest area of oil palm plantations in South Sumatra.

As a region that pioneered new renewable energy through the biofuel program, of course, efforts to develop the productivity of biofuel processing require a number of policies as a basis for the Musi Banyuasin district government. Regarding the policies that underlie the efforts of the Musi Banyuasin Regency Government in developing palm oil-based biofuels, an informant from the Musi Banyuasin Regency Government said: "The policy for developing biofuels in Muba refers to the law, then to government regulations, down to the district level. The point is that the policy in law number 30 of 2007 is the main umbrella for our energy policy. Its implementation is adjusted to the policies of each implementing region. This is in accordance with the principle of regional autonomy. So the regions are free to articulate policy objectives according to their capabilities in line with the policies above, namely laws, central regulations."

A similar statement was also conveyed by an informant from the Musi Banyuasin Regency Government who stated: "The development of oil palm-based biofuels is based on the policy that we are doing, the reference is from the center. It is quite clear in energy laws, national energy policies and general national energy plans. So the regional energy policy regarding biofuels will also refer to the general national energy plan." In other words, academic informants said that there was a lack of clarity about the main policy references specifically in Musi Banyuasin Regency. Furthermore, the informant said: "Actually, if I may say, the main reference for the development of biofuels is clear in the law, government regulations and ministerial regulations. But if we look closely, for now, let's say that in Muba Regency, is there no specific regulation on how to develop biofuels? Indeed, the discourse, issues, news, about Muba being a pilot project for biofuel sourced from palm oil has been buzzing lately. But the technical setup? Is there anything?"

Furthermore, according to the academic informant, even though it refers to the regional regulation on the general energy plan of South Sumatra Province, according to the informant for Musi Banyuasin Regency itself, there is no specific regulation that regulates the direction of the policy, which is manifested in a clear program. This is known by the Musi Banyuasin public.

What was disclosed by academic informants, if it is related to what was conveyed by Tangkilisan regarding forms of public policy, namely macro, meso and micro public policies, it can be said that meso and micro public policies related to the development of palm oil-based biofuels in Musi Banyuasin Regency have not there is.

The basis of policy implementation should ideally be based on clear regulations, both technical guidelines and implementation guidelines of an implemented policy. This is so that the exercise of authority through various program activities refers to clear boundaries in the regulations. So that the function of implementing the policy cannot be separated from the existing provisions.

The importance of meso and macro level policies, this is because Musi Banyuasin Regency has great potential for the expansion of oil palm plantations. This is as stated by an informant from the plantation office of Musi Banyuasin Regency who said: "It is still possible to continue to increase land area and production. There are more than one million hectares of vacant land that has not been utilized by the community. Even at the provincial level, South Sumatra will have 3 million hectares of oil palm land which will absorb more farmers' labor. This has great potential for the community's economy."

In order to get an idea of how the implementation of the policy for developing palm oil-based biofuels in Musi Banyuasin Regency, the researcher asked several informants to get an idea of how the policy was implemented. One of the descriptions was revealed by an informant from the Musi Banyuasin Regency Government who revealed: "The development of biofuels so far has been going quite well. This can be seen from the efforts

of the Musi Banyuasin Regency Government to encourage the acceleration of policies for developing palm oil-based biofuels. For example, we have made an MoU with ITB for the plan to build a biofuel factory. This EBT pilot has started from 2017.”

In addition to the efforts made by the Musi Banyuasin Regency Government, as explained by the informant above, another informant also added that the policy for developing palm oil-based biofuels is currently underway and showing positive results. Furthermore, the informant said: “Muba Regency has implemented this palm oil-based biofuel policy. For example, we have been able to produce palm oil of the Industrial Vegetable Oil (IVO) type, a derivative product of palm commodities. This is an example of how serious we are in implementing policies such as the central policy for this energy policy.”

The information from the informant above is similarly expressed by an informant from Pertamina Plaju, who said: “We welcome the efforts of the Muba Regency Government to develop biofuel from palm oil commodities. This business is already running with Pertamina. IVO production from farmers in Muba itself has been absorbed to meet the needs of the Plaju refinery. We will see in the future, I am optimistic, this palm biofuel has great potential.” Although the production of biofuel based on palm oil commodities is ongoing and increasing, the informants revealed that they have not been able to fully meet the demand for biofuels. Regarding this, the informant said: “The palm oil-based biofuel production developed in Muba can encourage the performance of the palm oil derivative processing industry in Muba, in South Sumatra Province as well, it will definitely increase. However, so far, we can say that production is still lacking. Not able to meet the needs of biofuels. If we look at the data on the area of oil palm plantations, let's say all over South Sumatra, yes including that from muba, only about 3.3 million tons of Crude Palm Oil (CPO).

Regarding the productivity of palm-based biofuel processing, which is still unable to meet demand needs, according to the Plantation Service informant who said: “If it is to meet the downstream needs of this palm oil commodity product. Yes we are still lacking. For the need for BBN B30 raw materials, it's still lacking. So what we need is to encourage the downstream development of this palm oil commodity which has great potential. For example, the district government plans to build a biofuel factory, this plan is to support the development of palm-based biofuels.”

Another policy related to the development of palm oil-based biofuels is from the institutional aspect. Related to this, the informant said that institutionally apart from the Musi Banyuasin Regency Government agency which strengthened its institutions for the development of palm oil-based biofuels, the informant further stated: “Support from the Muba Regency Government itself from an institutional perspective, it is certain that we strengthen the related OPD. this palm-based biofuel. For example from the Energy and Mineral Resources Office, the Plantation Service, from the BUMD itself, we also strengthen partnership institutions and others. In addition, we also support the Indonesia Sustainable Palm Oil (ISPO) Program by declaring the Muba Sustainable Palm Oil Initiative (MSPOI) with several action plans.”

Furthermore, regarding the development of palm oil-based biofuels as a synchronization of sustainable development in Musi Banyuasin Regency, the informant said that the development of palm biofuels must be in line with sustainable environmental policies. The informant said: “The government of Muba itself is currently concerned about preventing deforestation through a moratorium on new permits and replanting. This is a policy for developing palm oil biofuels while also paying attention to the conservation aspect.”

Regarding environmental aspects, the Plantation Service informant Musi Banyuasin also said: "The government is trying to continue to pay attention to environmental sustainability with the development of this palm biofuel. The moratorium policy is in line with our desire to protect the environment. We are trying to reduce the risk of forest fires that often occur in Muba. Farmers no longer work on peatlands by burning them. We are moratorium on plantation permits on peatlands and peatland restoration by rewetting, revegetation, revitalization."

Institutional strengthening involving various parties is considered a positive step to support the successful development of palm oil-based biofuels, this with strong institutions and the support of various parties will have an impact on the community. Regarding this, the Muba Plantation Office informant said: "We welcome the involvement of all parties and regional stakeholders. This is also the aim of promoting local welfare, including for farmers in our area as well. The more involved, the better. Yes, for example, there is currently a Center for Sustainable Commodity Excellence (PUKL) in Musi Banyuasin which is a place for oil palm development and a means for us to collaborate."

Support for the development of palm oil-based biofuels also came from the company, in this case represented by the Indonesian Palm Oil Association (GAPKI) South Sumatra, which said: "GAPKI is very happy and welcomes it. Why is that, what drives this biofuel program, GAPKI supports. First, that Indonesia is a net importer of crude oil, in the past we were oil exporters, we used to be victorious in the 80s we were fertile with oil, but now we are importers, so positively we become net importers of crude oil, so palm-based biofuels, we certainly support. Second, there are other effects that will have an effect, namely poverty alleviation and job opportunities. Now, that this oil palm area has a pretty good GRDP, income per capita is quite good, poverty is lower. So with the palm biofuel program, this will be better."

As stated by the informant above, the ESDM Office informant also believes that policies and support from various parties must have a positive impact on the community. The informant further said: "We are targeting the established factory to have positive benefits for farmers, increase their income, increase their family's welfare. That means the supply chain must be close to smallholder farmers, in order to reduce transportation costs and reduce emissions."

Regarding the appreciation from various parties for the efforts made by the Musi Banyuasin Regency government, an informant from the Musi Banyuasin Regency Government said: "What we have done in Musi Banyuasin has received good appreciation from various parties. We are supported by the central government and the provincial government is also very appreciative. Even from other countries also appreciate it, to the extent that last month the Norwegian Ambassador came directly to Musi Banyuasin, there he saw firsthand and supported the demonstration plot development program in Bayung Lincir. We are optimistic that, with a good appreciation and support from many parties, we hope that we will be able to increase productivity which will result in increased PAD, increasing the welfare of local communities, especially for smallholders."

Regarding the development of biofuels carried out in Musi Banyuasin Regency, appreciation was also conveyed from the farmers, one of which was conveyed by a KUD informant who stated: "If you look at what the district government is doing, there are also many who are involved, from parties outside the government we can also see quite a lot of support. This is good enough. Hopefully in the future this palm oil commodity will get more attention. And we got some attention too which is good. The point is that with the current government's efforts and many people who support it, we hope that this will have a good impact for us as smallholder farmers. Hopefully this can advance our economy."

In line with the KUD informant, the farmer community informant also expressed his hope with this palm oil-based biofuel development policy as follows: "Yes, of course, we as farmers have simple desires. Yes, we want smooth production, good prices, and if there are any difficulties, someone will help. Just that."

From the various descriptions put forward by the informants above, the researcher can say that the policy for developing palm oil-based biofuels in Musi Banyuasin Regency is going quite well. This can be seen from the evidence of the track record of the Musi Banyuasin Regency Government with various parties in efforts to develop palm oil-based biofuels. Various plans that are being carried out in building facilities, facilities and infrastructure for the development of palm biofuels, the existence of institutions that support the implementation of biofuel development policies, as well as support and appreciation from various parties are considered as an illustration that the policy is running quite well.

The policy for developing palm oil-based biofuels, as mentioned above, refers to statutory regulations, but in Musi Banyuasin Regency itself, the policy is micro which, although it has been legitimized, has not yet been included in the RPJMD of Musi Banyuasin Regency 2017-2022, in specific regulations. Regarding this development policy, neither Perda nor Perbup have yet been issued. However, efforts to develop palm oil-based vegetable biofuels are progressing quite well.

The implementation of policies related to the development of palm oil-based biofuels is said to be going quite well in Musi Banyuasin Regency, this is also according to the opinion (Hamdi 2014), the existence of appropriate supports from participation is a condition that is considered in the success of policy implementation. In addition, Hoogerwerf also argues that in the implementation of policies there are elements that support success, one of which is the existence of policies or programs that will be implemented. Regarding what Hoogerwerf said, it is a reality that is currently running in Musi Banyuasin Regency.

Then, the linkage of palm oil-based vegetable fuel policies related to sustainable development (SDGS) which is being implemented in Musi Banyuasin Regency can be explained that the policies carried out by the Banyu Asin Regency government include: 1) Building a processing industry and downstream plantation industries to increase the added value of plantation production. 2) Revitalization and Replanting of Plantation Land: Helping farmers start from the land certification process, assisting with the loan process from banks/NGOs, increasing farmer institutions. 3) Collecting data on plantation owners, and within 3 years Muba will have a database of people's plantations, making it easier to help farmers increase their production. 4) Implement the national priority program for Agrarian Reform in improving people's welfare. 5) Implement development with due regard to environmental impacts and climate change.

Then, from the statements of various informants, it was found that the Musi Banyuasin Regency Government in implementing the palm oil-based biofuel policy has and is currently carrying out various program activities including: 1) MoU with ITB for the construction of a biofuel factory. This EBT pilot has been started since 2017. 2) Successfully created Industrial Vegetabil Oil (IVO) type palm oil, a derivative product of palm commodities. 3) Supporting the Indonesia Sustainable Palm Oil (ISPO) Program by declaring the Muba Sustainable Palm Oil Initiative (MSPOI); 4) Deforestation prevention through moratorium on new permits and replanting; 5) Reducing the risk of forest fires that often occur in Muba by moratorium on plantation permits on peatlands and restoration of peatlands by rewetting, revegetation, revitalization; 6) Support the Center for Sustainable Commodity Excellence (PUKL) in Musi Banyuasin which is a forum for oil palm development and a suggestion for collaboration.



## IV. Conclusion

Based on the description of the results of the research and discussion, the researchers conclude as follows: the palm oil-based biofuel policy being implemented in Musi Banyuasin Regency is going quite well. Palm oil-based biofuel policies in Musi Banyuasin Regency include: development of the agricultural product processing industry and downstream industry, revitalization and replanting of plantation land, data collection on community plantations, agrarian reform, and development taking into account environmental impacts and climate change. Meanwhile, the policy programs that have been realized are through various programs, including those related to: a) Construction of a biofuel factory MoU with ITB since 2017; b) Support IVO (Industrial Vegetable Oil); c) Supporting Indonesia Sustainable Palm Oil (ISPO) by declaring the Muba Sustainable Palm Oil Initiative (MSPOI) (institutional); d) Prevention of deforestation through a moratorium on new permits and replanting; e) Moratorium on plantation permits on peatlands and restoration of peatlands by rewetting, revegetation, revitalization; f) Center of Excellence for Sustainable Commodities (PUKL) in Musi Banyuasin

The palm oil-based biofuel policy embodied through these various programs is related to the following Sustainable Development Goals: 1) Eradicating poverty; 2) Good health and well-being; 3) Clean and affordable energy; 4) Infrastructure, Industry and Innovation; 5) Reducing inequality; 6) Responsible consumption and production; 7) Handling Climate Change; 8) Peace, justice, strong institutions; 9) Protecting terrestrial ecosystems; 10) Partnership to achieve goals.

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