Gap analysis of environmental licensing on oil palm plantations in eastern part of South Sumatra Province

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Abstract. The purpose of this study is to examine the gap analysis of environmental licensing both environmental permits, business licenses, and certification of oil palm plantations and their implementation in the field. This research is conducted in the eastern part of South Sumatra Province, focusing on six private companies in the field of oil palm plantations. Although the area has environmental management policies and regulations, many environmental problems still occur. This is indicated because there is a gap between the development of environmental policies related to licensing and their implementation in the field. The study is carried out using gap analysis method which is a common and simple technique in the evaluation of public policies. The results showed a gap value of less than 0.5 which indicates that the companies have implemented and complied in conducting business activities that refer to applicable environmental policies with the fulfilment of location permits and business licenses. It also signified that all companies have fulfilled the environmental permit component properly. However, there is a gap in terms of ownership of environmental certification. While almost all companies have already acquired ISPO (Indonesia Sustainable Palm Oil) certification, the government needs to provide assistance to companies to increase the company's readiness to complete certification.

1. Introduction
Sumatra Island is an early development area as well as a major center for Indonesian oil palm plantations [1]. According to the Directorate General of Plantations, the area of oil palm plantations in Indonesia, especially in Sumatra, has increased by 25.42% with the area of national oil cover covering 16.3 million hectares from Year 2010 to Year 2019 [2]. According to the Statistics of Indonesian Plantation, South Sumatra Province is the 5th largest producer of oil palm plantation products in Indonesia after Riau, North Sumatra, West Kalimantan and Central Kalimantan, with an area of 1.5 million hectares or an approximate of 8.96% of the total national oil palm plantations [3]. One of the areas with the largest area of oil palm plantations in the eastern part of South Sumatra is located in Banyuasin and Musi Banyuasin Regencies.
In recent years, there have been environmental problems in the province of South Sumatra caused by the lack of prudent environmental management and forest fires which in turn caused negative impact on the environment. Based on these indications, it is necessary to conduct a gap analysis of environmental policies related to licensing such as environmental permits, business licenses, and certification of oil palm plantations and implementation in the field. The gap analysis will be done by reviewing primary, secondary and tertiary legal materials as well as inventorying and compiling several laws and regulations at the central, provincial and district levels which are then normatively observed from the implementation of the policy regulations. The gap analysis is carried out using the Gap Analysis Method which is a simple technique for evaluating public policies [4].

2. Methods
The materials used in this study are in the form of laws and regulations regarding policies and environmental sustainability in oil palm plantations. The tools used for data processing and analysis of this study are questionnaires and data processing equipment.

2.1. Data collection method and data analysis procedure

2.1.1. Primary data. Data collection and analysis is carried out by conducting field observations (systematic observation and recording of the symptoms and aspects studied at the study site) and interviews with competent stakeholders related to oil palm plantation environmental policy issues.

2.1.2. Secondary data. Collection and analysis is done by reviewing the applicable laws and regulations relating to the policy and environmental sustainability of oil palm plantations as well as compliance with documents and data records from the results of environmental management and monitoring activities.

2.1.3. Analysis and comparative study of data suitability. Comparative analysis and study is carried out to determine the suitability of the policies stipulated by the implementation in the field. Data or information obtained from survey activities are processed and analyzed by tabulation or matrix, descriptive and comparative systems [5].

2.2. Regulatory gap analysis
The analysis of the gap was conducted by identifying the policy that will be evaluated, identifying the program indicators of the policy, analyzing the stakeholders who play significant roles in policy-making, and analyzing the gap between the policies made with their implementation in the field [4,6].

2.3. Determine the implementation score (I)
Implementation score is determined using the formula below:

\[
I = \frac{\text{Checked component}}{\text{Available components}} \times 100\%
\]  

Table 1 shows the scoring calculation and the percentage for each criteria.

| Percentage (%) | Criteria |
|----------------|----------|
| 96 – 100       | requirements or policies have been implemented properly |
| 90 – 95        | requirements or policies have been implemented well but have not been consistent |
| 76 – 89        | some requirements or policies have been implemented but are still not consistent |
| 51 – 75        | there are still requirements or policies that have not been implemented properly |
| 0 – 50         | not carried out in accordance with existing policies. Companies still need special training in its application. |
2.4. Determine of the gap (G)
Gap is determined using the formula below:

\[ G = K - I \]  \hspace{1cm} (2)

where:
\[ G \]  = gap
\[ K \]  = total score (%)
\[ I \]  = implementation score (%)

where obtained the following gap criteria:
\[ \text{Gap} < 0.5 \]  = Low gap, where implementation has been successful according to plan and able to overcome problems in society.
\[ \text{Gap} > 0.5 \]  = High inequality, where implementation has not succeeded or failed in overcoming problems in society.

3. Results

3.1. Study area
This research was conducted in the eastern part of South Sumatra Province, namely in the Banyuasin and Musi Banyuasin Regencies. Banyuasin Regency has abundant natural resources; one of its superior products is palm oil. It has an area of 12,000 km² which is divided into 19 districts [7]. It has a topography of 80% of the flat area in the form of tidal swamps, and the remainder is in the form of dry land with a height distribution of 0-40 meters above sea level. It has a climate type B1 according to Oldemand Classification with an average temperature of 26.1-27.4 °C and an average humidity of 69.4% - 85.5% with an average rainfall of 2,723 mm/year. Whereas Musi Banyuasin Regency is one of the districts in eastern part of South Sumatra province which has topography in the form of swamps and brackish that is affected by tides. There are no coastal areas and other areas in the form of highlands and hilly with heights reaching 14-37 meters above sea level and the main products of this district are from the oil palm plantation sector [7]. The Regency has a topical and wet climate type with rainfall variation between 74.2-360.6 mm/ with an average temperature of 27-31 °C and average humidity and relative humidity 60% - 85% [7]. As districts that have superior products in the oil palm plantation sector, there are several oil palm companies both in Banyuasi and in Musi Banyuasin Regencies.

3.2. Fulfillment environmental licensing

3.2.1. Location permits, business licenses and environmental permits. The initial stage that needs to be done by the company when utilizing a land for oil palm plantation is to obtain an environmental permit set by the government. The requirements include the availability of environmental permit documents such as environmental impact assessment (AMDAL), environmental management efforts (UKL) or environmental monitoring efforts (UPL) and environmental management and monitoring capability (SPPL).
Figure 1. Illustration of licensing environmental management of oil palm plantations.

Figure 1 is an illustration of licensing environmental management of oil palm plantations. Based on the figure for the legality of management or environmental permit procedures for oil palm plantation companies that have land area (L > 3,000 ha), the business or activity within the company must be AMDAL, if (25 > L < 3,000 ha) then the business or the activity within the company is mandatory for UKL-UPL and if (L < 25 ha) then the business or activity within the company is mandatory for SPPL. Based on Table 2 the area of oil palm plantations owned by six companies in the eastern part of South Sumatra Province has an area of (L > 3000 ha). Therefore, the six oil palm plantation companies must comply with AMDAL.

Table 2. The area of oil palm plantations owned by each company.

| Companies | Land area (Ha) | AMDAL/UKL-UPL/SPPL |
|-----------|----------------|---------------------|
| PT A      | 24000          | Needed AMDAL        |
| PT B      | 7000           | Needed AMDAL        |
| PT C      | 9709.24        | Needed AMDAL        |
| PT D      | 19000          | Needed AMDAL        |
| PT E      | 4000           | Needed AMDAL        |
| PT F      | 12000          | Needed AMDAL        |

Source: In-depth interview 2019

Permits such as environmental permits, location permits and business licenses in the process of clearing oil palm land are important because oil palm land that is cleared is likely to be located near residential areas, making it vulnerable to land disputes between residents and companies [8]. To prevent future disputes, the government as a regulatory body issues licenses as a tool to oversee the opening of this land.

Table 3 shows the fulfilment of location permits, business licenses and environmental permits by six oil palm plantation companies in the eastern region of South Sumatra Province. Based on Table 3, sourced from interviews, the six oil palm companies in the eastern part of South Sumatra province
already have location licenses, business licenses and environmental permits, as evidenced by a decree on location licensing and business activities.

**Table 3.** Location permits, business licenses and environmental permits being owned by companies.

| Companies | Location permits | Business licenses | Environmental permits |
|-----------|------------------|-------------------|-----------------------|
| A         | SK No. KEP.143/MEN/ 1997 | SK No. 593/4005/I/2002 | AMDAL |
| B         | SK No. 1091/2010 | SK No. 1332/2010 | AMDAL |
| C         | SK No. JA-5/115/3/ 2001 | SK No. JA-5/115/3/ 2005 | AMDAL |
| D         | SK No. 929/Menhut/VII/2000 | SK No. 929/Menhutbun/VII/2000 | AMDAL |
| E         | SK No. 27/SK/I/1998 | SK No. 114/SK/I/1988 | AMDAL |
| F         | SK No. 130/Pt/2008 | SK No. 011/Kpts//DISB/04/2009 | AMDAL |

Source: In-depth interview 2019

3.2.2. **Certification.** The certification referred to in this study is the environmental competence obtained through a series of issuance of certification activities in environmental management in the field of oil palm plantations as a form of recognition of the competency capabilities of the personnel or company where the certification was ratified by a competency certification body appointed by the Minister of the Ministry of Environment and Forestry.

**Figure 2.** Percentage of certification ownership.

Figure 2 shows the percentage of certification ownership where companies A, C, and D have a percentage of 25%. Further, it shows that companies A, C, and D only have one certification out of the four environmental certifications authorized by the competency certification body. Company B having a 100% ownership of certification indicates that it has all four certifications required by the government. Company F having a 75% ownership of certification signifies that it has 3 out of 4 environmental certifications approved by the certification body. Company E with 0% only means that it does not have certifications yet.
Figure 3. Percentage of the type of certification being owned by companies.

Figure 3 shows the percentage of the type of certification related to environmental management owned by a palm oil company in the eastern part of South Sumatra Province. The certification is approved by a competency certification agency appointed by the Minister of the Ministry of Environment and Forestry. These certifications include ISPO (Indonesian Sustainable Palm Oil) certification, RSPO (Roundtable Sustainable Palm Oil), PROPER (Performance Rating Program in Environmental and Management), ISO 9000 (International Organization Standards for quality standards) and ISO 14000 (for environmental standard). Of the four certifications, an approximate of 67% or four of the six companies in the eastern part of South Sumatra province have ISPO certification, 50% or half of the six companies have PROPER certification, 33% or about two of the six companies have ISO certification, and only 17% or only one company has RSPO certification. This is because RSPO is a voluntary certification, so it is not strong enough for enforcement and is not based on government regulations, other than that there are no requirements for oil palm plantation companies for RSPO certification [9]. So only one company has RSPO certification. ISPO Certification is mandatory for all oil palm companies in Indonesia making its enforcement strong. Because it is based on government regulations, almost all companies have ISPO certification [10].

3.3. Gap Analysis and implementation of licensing

Gap analysis is used as a tool in analyzing the gap by comparing the current conditions with the conditions to be achieved [11]. By doing gap analysis, we can identify what gaps are needed to found out. Gap analysis can be used at each stage to analyses the policies that are being implemented [12]. To carry out gap analysis, we first need to know what our goals are, then analyses the current situation and make sure that the information collected comes from the right source; the last is to identify how we can bridge the gap between current conditions and develop targets in the future [4].

In this study, a gap analysis of environmental policies on the environment of oil palm plantations and their implementation is related to the fulfilment of environmental permits in conducting business or activities in the field of oil palm plantations. Table 3 shows the implementation score for fulfilling environmental permits by oil palm plantation companies in the eastern part of South Sumatra province.

Based on Table 4, the implementation of fulfilling legality or permits and environmental permits has a score of 100% signifying that requirements or policies have been implemented properly and lastly, the implementation of certification has a score of 42 % which means that it is not carried out in accordance with existing policies; thus, companies still need special training in its application.
Table 4. Scores implementation licensing compliance environment.

| No | Components | Score (%) | Criteria |
|----|------------|-----------|----------|
| 1  | Compliance with legality or licensing: (Location permit, Business license) | 100 | requirements or policies have been implemented properly |
| 2  | Environmental permits: (AMDAL, UKL/UKL, SPPL) | 100 | requirements or policies have been implemented properly |
| 3  | Certification (ISPO, RSPO, PROPER, ISO) | 42 | not carried out in accordance with existing policies. Companies still need special training in its application. |

Average score: 80.67 some requirements or policies have been implemented but are still not consistent

Table 5 shows the gap analysis score related to the fulfilment of environmental permits. Components related to the fulfilment of legality and licensing, also environmental permits have values below 0.5 indicating that policy implementation has been successful according to plan and able to overcome problems in society. It also indicates that the company continues to do efforts to avoid gaps in implementing environmental policies, one of which is by issuing work instructions as guidelines for implementation.

The level of implementation of environmental policy varies across companies. Increased attention to the environment will improve environmental performance, and also improve company performance [13]. Other results indicate that companies with high top management concerns have better environmental performance than companies with low environmental attention. In addition, companies that pay attention to the high environment tend to have better company performance, especially in profit and operational efficiency. The certification component has a gap value above 0.5 which means that policy implementation has not succeeded or failed in overcoming problems in society, but the average gap value for the fulfilment of environmental licensing for oil palm companies in the eastern part of South Sumatra province is 0.19 or below 0.5 indicating that policy implementation has been successful according to plan and able to overcome problems in society.

Table 5. Gap analysis.

| No | Components | Total Score (%) | Implementation Score (%) | Gap |
|----|------------|-----------------|--------------------------|-----|
| 1  | Compliance with legality or licensing: Location permit | 100 | 100 | 0.00 |
|    | Business permit | 100 | 100 | 0.00 |
|    | Sub average gap | 0.00 |
| 2  | Environmental permits: AMDAL/UKL/UKL/SPPL | 100 | 100 | 0.00 |
|    | Sub average gap | 0.00 |
| 3  | Certification: ISPO | 100 | 67 | 0.33 |
|    | PROPER | 100 | 50 | 0.50 |
|    | ISO | 100 | 33 | 0.67 |
|    | RSPO | 100 | 17 | 0.83 |
|    | Sub average gap | 0.58 |
|    | Average gap | 0.19 |
4. Conclusion

In fulfilling the environmental licensing, almost all companies that serve as objects of this research have complied and implemented it well. However, the implementation for the certification component is still lacking. The government needs to provide assistance to companies to increase their readiness to complete the certification. The effectiveness of the implementation of sustainable environmental policies by companies in the work landscape has been implemented quite well, especially in the environmental policy socialization system even though its implementation has not been able to reach 100%. The average value of the gap for the fulfillment of environmental licensing of oil palm companies in the eastern part of South Sumatra province is 0.19 or below 0.5, indicating that policy implementation has been successful according to plan and able to overcome problems in society. With this, it can be concluded that oil palm plantation companies in the eastern part of South Sumatra province have complied with environmental licensing both in terms of environmental permits, location permits, and business licenses in carrying out business activities.

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