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Environmental carrying  
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## RESEARCH PAPER

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## Environmental carrying capacity and environmental capacity in the issuance of recommendation and borrow-use permit of forest area

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**Key words:** Environmental carrying capacity, Environmental capacity, Borrow-use forest area permit.

### Abstract

The decrease in the carrying capacity and environmental capacity in Tanah Bumbu Regency is related to the impact of extensive land use by opening land cover inevitably in various economic activities, one of which is land use activities, namely land use using the Forest Land Use Loan (IPPKH) mechanism. However, considering that Tanah Bumbu Regency is a district that is in a vulnerable position with coastal flooding and river flooding, this is related to the geographical position of Tanah Bumbu Regency which also borders the sea so it needs attention for handling flood events and post-flood events. This study aims to examine the relationship of carrying capacity and environmental capacity in the context of the issuance of a Recommendation for Borrowing and Use of Forest Areas and assess the impact of granting Borrowing and Use of Forest Areas to the surrounding community. The research was carried out by the method of observation and literature study. Utilization of the Borrowing Use Forest Area permit area in Tanah Bumbu Regency based on data on Borrowing Permits using Forest Areas in November 2016 has reached 19,082.99 Ha. The location is in the forest area of 18,619.04 Ha and outside the forest area covering 493.95Ha. The location of the Borrowing Permit is in the area category, namely the area of Nature Reserve, Protection Forest, Conversion Production Forest, Limited Production Forest, Permanent Production Forest, Industrial Allotment Area, Other Designated Areas, Estate Allotment Areas and Settlement Allocation Areas based on the South Kalimantan Spatial Plan 2015-2035. In order to minimize the occurrence of disasters it is necessary to increase the strengthening of regulations at the government level in the use of land by prioritizing the implementation of development activities as well as an environmentally sound economy and raising awareness of the community and the private sector in anticipating and managing disasters.

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## Introduction

The implementation of Indonesian law (Law No. 23 of 2014) concerning Regional Government, one of which is the implementation of the authority of licensing and non-licensing fields for the provincial government. One of the authorities delegated is the mining and forestry licensing. Based on Law No. 41 of 1999 on Forestry, a forest is an ecosystem unit in the form of a stretch of land containing biological natural resources which are dominated by trees in their natural environment, which cannot be separated from one another.

The main purpose of forest use is to empower the community or prosper the community (Government Regulation No. 6 of 2007). In Indonesia, forest use is regulated in Government Regulation No. 6 of 2007 on Forest Governance and Preparation of Forest Management Plans, and Forest Utilization. Utilization permit is a permit issued by an authorized official consisting of a business permit to utilize environmental services, a business permit to utilize timber or non-timber products, or a permit to collect timber or non-timber forest products in a forest that has been granted a permit (Government Regulation Number 6 of 2007). The holders of forest utilization business licenses are subject to levies as a substitute for the intrinsic value of the forest products they have acquired (Siahaan, 2004). The Environmental Supporting Capacity is the Environmental Ability to support human life, other living things, and the balance between the two, while the Environmental Capacity is an Environmental Ability to absorb substances, energy, and/or other components that enter or are inserted into it (Government Regulation Number 46 of 2016). According to Tan (2009) in Widiatmaka, *et al.* (2015), land is one of the abiotic components of the main environment which is the basic ingredient of life.

The land has a limited carrying capacity, therefore its utilization must be adjusted to its capabilities so that there is no damage (Stocking and Murnaghan, 2002 in Widiatmaka *et al.*, 2015). Based on Law Number 26 of 2007 on Spatial Planning, it is stated that in the context of environmental preservation, the forest area should be set at least 30% (thirty percent) of the watershed area.

UNISDR (2009) describes disaster terminology as a serious disruption to the functioning of a society that causes widespread harm to human life in terms of material, economic, or environmental, and exceeds the ability of people to cope with their own resources. Disasters are the result of a combination of hazards, conditions of vulnerability, and lack of capacity and measures to reduce or overcome potential negative impacts.

## Research method

### *Time and Location of Research*

This research was carried out in the Tanah Bumbu District of South Kalimantan Province. The research is conducted from March to June 2017.

### *Research Tools*

The equipment used during conducting research includes research location maps, cameras, and writing instruments.

### *Data Analysis*

The method used is a desk study, the data collected is secondary data from the relevant agencies to be subsequently processed by:

Overlaying a map of Borrow-Use Forest Areas that are still active in Tanah Bumbu Regency as of November 2016 and the 2015 South Kalimantan Province Spatial Planning Map.

Analyzing the results of the overlay shows that the land is related to the percentage of forest area where there is no permit to use the forest area. This analysis was carried out by comparing the analysis with the South Kalimantan Province Spatial Map and the Map of Forest Area Borrowing Permit as of November 2016, whether the area is still in accordance with the condition of the forest that is still sustainable.

## Results and discussion

Based on the results of the study, it was found that the area designated as Borrow-Use Permit forest area was in 9 (nine) regional categories, namely the area of Nature Reserve, Protected Forest, Conversion Production Forest, Limited Production Forest, Permanent Production Forest, Industrial Area, Other Area, Plantation Area and Residential Area.

The overlay result as detailed in Table 1. describes that the total Borrow-Use Forest Area has reached an area of 19,082.99Ha. The location of the Borrow-Use Forest Area is spread over 9 (nine) regions based on the South Kalimantan Province Spatial Plan. The area in each of these areas varies with the smallest area in other allotment areas which is only 0.60Ha, while the largest use of Borrow-Use Forest Areas is in Permanent Production Forest Areas reaching 14,484.07Ha. Based on the regulation (P.50/Menlhk/Setjen/Kum.1/6/2016) on Guidelines for Borrow-Use Permit of Forest Areas, the use of forest areas for the purpose of development outside forestry activities can only be given in Production

Forest Area and/or Protected Forest Area. The area that can be given is 10% or in accordance with other provisions stated in this Ministerial Decree. Based on the regulation, the location of a suitable Borrow-Use Permit Area is located in Protected Forests and Production Forests (Permanent Production Forests, Conversion Production Forests, and Limited Production Forests) reaching 18,619.04Ha. However, the total area of the Borrow-Use Permit Forest Area which lies out of the permitted area as stated in the regulation 493.95 Ha consisting of the area of Nature Reserve, Industrial Area, Other Areas, Plantation Areas, and Residential Area.

**Table 1.** Data on the Use of Regions for Borrowing and Using Forest Areas Permits as of November 2016.

No. Area	Total Area (Ha)	BUPFA (Ha)	Remaining Area (Ha)	Percentage/ Area	Percentage of BUPFA
1 Nature Reserve	6.004,24	10,96	5.993,28	0,18	0,06
2 Protected Forest	83.774,74	72,35	83.702,39	0,09	0,38
3 Conversion Production Forest	26.830,02	2.159,99	24.670,03	8,05	11,32
4 Limited Production Forest	25.402,32	1.902,63	23.499,69	7,49	9,97
5 Permanent Production Forest	143.178,10	14.484,07	128.694,03	10,12	75,90
6 Industrial Area	650,36	40,71	609,65	6,26	0,21
7 Other Area	5.801,35	0,60	5.800,75	0,01	0,00
8 Plantation Area	134.063,00	374,03	133.688,97	0,28	1,96
9 Residential Area	32.779,61	37,65	32.741,96	0,11	0,20

The granting of a Borrow-Use Forest Area Permit outside the appropriate area should be of particular concern to the government. One of them includes the location of the Borrow-Use Forest Area area in the Nature Reserve Area. The definition of a nature reserve based on Law Number 5 of 1990 on Conservation of Biological Natural Resources and Ecosystems is a natural reserve area because of its natural conditions which have specific plants, animals and ecosystems or certain ecosystems that need to be protected and their development takes place naturally. This is certainly important to maintain its existence. Related to the use of areas that are not in accordance with the regulations, it is the government's duty and responsibility to overcome and resolve these problems in accordance with applicable regulations.

The total area of Borrow-Use Forest Areas in Protected Forests and Production Forests has reached

18,619.04Ha while the total area of protected forest and Production Forest Areas in Tanah Bumbu Regency is 279,185.18Ha. The percentage of land utilization for Borrow-Use Forest Areas from Total Protected Forest Areas and Production Forests in Tanah Bumbu Regency has reached 6.6%. The remaining areas of Protected Forest and Production Forest are 260,566.14Ha. However, based on P.50/Menlhk/Setjen/Kum.1/6/2016 the total quota of forest area that is permitted for Borrow-Use Forest Area is 10% for Production Forest and Protection Forest per forest group or other stipulated provisions. Table 1 shows that the utilization percentage in Protection Forest is 0.6%, Conversion Production Forest is 8.05%, Limited Production Forest is 7.49% and Permanent Production Forest reaches 10, 12%. The more extensive area is possible because under the Law No. 26 of 2007 the required forest area is 30% of the watershed area to be maintained, it is shown that based on the overlay results where the area of Tanah

Bumbu Regency is 473,288.58Ha with forest area which is still around 283,977.24Ha so that the percentage of the Tanah Bumbu Regency forest area is still at 59.99%. It can be concluded that the carrying capacity and environmental capacity of Tanah Bumbu Regency are still in a safe condition. Consequently, the proposal for Borrow-Use Forest Area Permits with the requirement that there should be a recommendation for this permit can still be considered to be given. However, for areas that cannot be ascertained in real terms, it depends on the location or region whether it is real as a forest area or there has been any forest utilization permit.

Implementation of Borrow-Use Forest Area Permit for mining activities conducted in Production Forests can be with open mining patterns or closed mining scheme, or in Protected Forest areas with closed mining system or other provisions in accordance with P.50/Menlhk/Setjen/Kum.1/6/1/2016.

In addition, other things that will arise with the existence of a Borrow-Use Forest Area Permit are described as follows:

1. The land use for Borrow-Use Forest Area Permit as of November 2016 has reached 19,082.99Ha with details on the permitted area of 18,619.04Ha located in Protected Forests and Production Forests (Permanent Production Forests, Conversion Production Forests, and Limited production forest). On the other hand, the area of the Borrow-Use Forest Areas located in areas that are not in accordance with regulations is covering an area of 493.95Ha consisting of areas of Nature Reserve, Industrial Areas, Other Areas, Plantation Area, and Residential Areas. This needs to be considered by the government to be immediately followed up in accordance with applicable regulations. Strengthening government regulations regarding forest area utilization by prioritizing environmentally sound use, consistent implementation of reclamation, reforestation activities as prevention of reduced forested areas and empowerment activities of Watersheds.

2. The problem that can arise is the occurrence of a disaster. Disaster events that can occur in Tanah Bumbu Regency are Flood and Drought. As stated in

*Buku Atlas Rawan Banjir Kabupaten Tanah Bumbu* (2016), Tanah Bumbu Regency is a district that is threatened by floods, namely coastal flooding, and river flooding. The coastal flood-prone areas are Angsana, Satui, and Simpang Empat Districts. Whereas flood-prone areas are in Batulicin, Kusan Hilir, Kusan Hulu, Angsana, Karangbintang, Kuranji, Satui and Simpang Empat. Whereas the occurrence of drought in 2015 hit 10 (ten) sub-districts in Tanah Bumbu Regency (Kabupaten Tanah Bumbu Dalam Angka, 2016). The existence of this flood threat both coastal flooding and river flooding requires handling when the flood occurs and after it occurs. Furthermore, to overcome this situation, the application of land use patterns is required by referring to the stipulated Regional Spatial Planning. Land use, especially forest areas for Borrow-Use Permit Forest Areas, will only be determined in areas that are not included in flood-prone areas in order to minimize the occurrence of floods. Disaster-prone conditions make it necessary to take quick and continuous steps in the handling process. This situation requires participation among the government, the private sector, and the community. It is necessary to increase people's awareness and skills in handling disasters such as land and forest fires that require responsiveness to reduce the area of forest and land fires. Establish disaster posts at certain points which are alleged to be disaster prone in order to facilitate monitoring and handling of disaster events.

3. Location of Borrow-Use Forest areas that are close to settlements provides various impacts, both positive and negative impacts. One positive impact is to enable some people to get a job. However, it depends to the level of education and skills that the community has and the needs of companies that provide employment. If the level of skill and education obtained by the job seeker is not in accordance with what is needed by the company, there can be a social gap between the community that can be employed and the community who cannot. This problem will occur if the location of the Borrow-Use Forest Area is close to the community settlement. In addition, it is less likely for the location of the Borrow-Use Forest Area to be located far from the residential area of the



community. These problems need to be considered by the government and the company carefully and wisely. The anticipation that can be taken to minimize the possibility of social inequality is by issuing Borrow-Use Permit that is located far from residential areas. One of the areas of Borrow-Use Forest Area which is located in a residential area that is located in the administrative area of the Sungai Cuka village of Satui District.

## 6 Conclusion

Based on the results of the research that has been conducted, the conclusions are as follows:

1. Carrying capacity and environmental capacity in Tanah Bumbu Regency is still possible to give permission for Borrow-Use Forest Area Permit. The forest land used is still around 6.56% of the 59.99% of the forest area. The rest of the land cover still meets the criteria of Law No. 26 of 2007 on Spatial Planning which in the context of environmental preservation stipulates that the forest area is at least 30% of the watershed area.
2. The use of land for Borrow-Use Forest Area Permit has a positive and negative impact on communities living close to the area. However, land use outside the permitted area can cause a disaster.

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