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Banda Aceh, 4 May 2023

To.

Mr. Halim Akbar
Agroecotechnology Study Program, Faculty of Agriculture,
Malikussaleh University, 24351, Indonesia
Email: halim@unimal.ac.id

Dear Mr. Halim Akbar,

I am pleased to inform you that your article entitled **"Evaluation of Land Capability and Land Use Direction In the Krueng Peusangan Hilir Sub-watershed, Bireuen Regency"** has been **accepted** for publication in the **Aceh International Journal of Science and Technology (AIJST)** after independent peer review. Tentatively, your paper will be published in the AIJST **Volume 12, No 1, April 2023**.

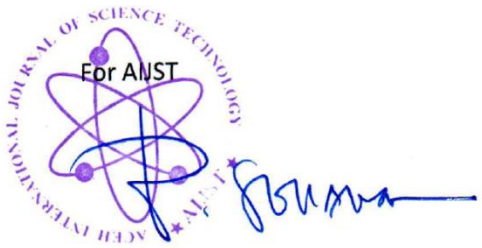
We have reached a decision regarding your submission to the **Aceh International Journal of Science and Technology (AIJST)**. The manuscript has been reviewed by the editorial board members of the journal and independent experts in the field. Based on the reviewer's comments, I am delighted to inform you that the manuscript is now **accepted for publication in the journal**. On behalf of the Editorial Board, I would like to thank for your contribution and hope that you will consider this journal for future manuscripts.

We shall be most grateful if you could kindly agree to distribute the journal information to your colleagues at http://jurnal.unsyiah.ac.id/AIJST/index.

We wish to thank you for submission of the manuscript to the **Aceh International Journal of Science and Technology (AIJST)** and look forward to a continued collaboration in the future.

Again, I sincerely thank you for submission of the manuscript in the **Aceh International Journal of Science and Technology (AIJST)**

With warm regards,



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Thank you for submitting the manuscript, "Land Capability and Land Use Direction Assessment in the Peusangan Hilir Sub-watershed, Bireuen Regency" to Aceh International Journal of Science and Technology. With the online journal management system that we are using, you will be able to track its progress through the editorial process by logging in to the journal web site:

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If you have any questions, please contact me. Thank you for considering this journal as a venue for your work.

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Land Capability and Land Use Direction Assessment in the Peusangan Hilir Sub-watershed, Bireuen Regency

Halim Akbar[1], Sarifuddin[2], Sakral Hasby Puarada[3]
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Abstract

Changes in land use in a watershed (DAS) are ongoing and impact the hydrological conditions of a watershed. The significant change in the use of open land due to development activities and the population growth rate continues to increase. This study aimed to evaluate land capability classes and determine land use directions in accordance with land capability classes in the Krueng Peusangan Hilir Sub-watershed. The research method used in this study is a survey method with a land capability evaluation approach, namely conducting land capability assessments based on USDA criteria (Arsyad, 2010). The results showed that the land capability class consisted of class II land capability with an area of 16668.30 ha, land capability class III covering an area of 4184.06 ha, and land capability class IV covering an area of 4524.91 ha. Land capability class VI covers an area of 190.79 ha with soil erodibility inhibiting factors (medium - very high) and slopes (wavy - rather steep). The effort that needs the limiting factor of soil erodibility is adding organic matter to maintain the stability of the soil aggregate. This follows the opinion of Vorone et al. (1981) that soil erodibility decreased linearly with the increase or addition of organic matter in the soil. Some research results show the soils with high organic matter content have high erodibility (Asdak, 2022). For the limiting factor of slopes in land capability classes II, III, IV, and VI in all LMU, if LMU is for agricultural cultivation, soil conservation measures are needed, such as making mound terraces or canal mound terraces, planting in strips and using mulch (Arsyad et al., 2018. Directions for land use for class II include moderate soil conservation measures, alternating cropping patterns, and additional treatment with ground cover crops. Type III can be recommended for agricultural areas accompanied by mulch as much as 6 tons/ha and doing work, class IV are to recommended agroforestry model cropping patterns, included with making individual terraces, and class VI is recommended for pastures or grazing. It must be appropriately managed to avoid erosion.

Keywords: Peusangan Hilir Sub-watershed, Land Capability, Land Use Direction

Comment [SS1]: The abstract is not well prepared in accordance with the provision of AIJST, please author refer to the guideline for the author of the journal, the English must be corrected, the word count not more than 300 words, and the there is no citation in the abstract, comprehensively please refer to https://jurnal.usk.ac.id/AIJST/about/submissions#authorGuidelines

Introduction

DAS is a watershed is a land area that is an integral part of a river and its tributaries, which functions to collect, store and drain water from rainfall into lakes or seas naturally (Fitri et al., 2022). The area of the watershed is limited by land topography, and the boundary separating the sea from the waters is still influenced by activities on land (Government Regulation Number 37 of 2012). Watershed management is a form of regional development in which the watershed is a management unit that is interconnected between upstream and downstream in the biophysical aspect through the hydrological cycle. (Fitri et al., 2020). The upstream Peusangan watershed, located in Central Aceh District, Bener Meriah District, Nagan Raya District, is one of the priority watersheds for restoration (Ministry of Environment and Forestry, 2015).

The destruction of forests in watersheds has now become a concern for many parties, resulting in floods, landslides, and droughts that have continued to increase. Watershed damage is accelerated by increased utilization of natural resources due to population growth and economic development, conflicts of interest, and lack of integration between sectors between upstream-middle-downstream areas. Unwise land use affects the hydrological function of an area. Hydrological response disturbance is one indicator of watershed damage (Wiyanti, et al. 2022). Uncontrolled exploitation of land use in the watershed has resulted

in a decrease in the biophysical condition of the watershed, changes in the function of the watershed, reduced forest area, dry land area, and increased human settlements. Changes to land without proper spatial planning along the Peusangan watershed have also caused damage to ecosystems that have had an impact on the survival of various ethnic groups. (Gayo and Aceh) who inhabit the upstream, middle, and downstream areas of the Peusangan watershed (Ilhamsyah et al., 2012)

The Krueng Peusangan Hilir sub-watershed, one of the sub-watersheds of the Krueng Peusangan watershed, has an area of 29267.72 ha. The Peusangan Hilir sub-watershed, in its land use, is mainly used for agricultural activities such as agriculture for dry land and wetlands. The agricultural potential in the Krueng Peusangan Hilir sub-watershed is significant, but significant land use obstacles need to follow land capability principles (BPDAS Aceh, 2020).

Land use that is not under its capabilities will also increase the problem of poverty and other social issues besides causing land damage (Hardjowigeno & Widiatmaka, 2015). Classification of land capability is an effort to evaluate land for particular uses. In contrast, the evaluation of land capability is a systematic assessment of land (land components) and grouping them into several categories based on the characteristics that are potential obstacles to their sustainable use (Arsyad, 2010).

Judging from the problems in the Peusangan Hilir sub-watershed, the development of agricultural land must include the principles of soil and water conservation to guarantee increased production and community income to create a sustainable watershed (Sinukaban, 1997). For this reason, it is essential to assess land capability in a watershed so that land development follows land capability classes.

Comment [SS2]: In the introduction the authors have to clearly stated the problem, what are the problems for the watershed, is the any fact that the watershed now low capability to supply water probably? or other problem???, what is the state of the arts of the research

Materials and Method

This study aims to evaluate land capability classes and determine land use directions following land capability classes in the Krueng Peusangan Hilir Sub-watershed.

Comment [SS3]: These is the aim of the study, should appear in the material and mehod

Research sites

The Krueng Peusangan Hilir sub-watershed is one of the sub-watersheds of the Krueng Peusangan watershed, which is geographically located at 95°58'00" - 96°52'00" East Longitude and 5°06'00"- 5°17'00" North Latitude. The research was carried out from October 2021 to February 2022. The research location is located in the Bireuen district.

Tools and materials

The tools used in this study consisted of GPS, compass, Abney level, soil drill, Munsell soil color chart book, hoe, machete, scope, stationery, topographic maps, soil type maps, land use maps, land unit maps. (LMU). The materials used in this study were soil samples (intact and incomplete soil) and chemicals used for soil analysis in the laboratory.

Data Collection Techniques

The data collection technique used in this study was a survey method which consisted of a preparatory stage, namely the preparation of secondary data, including base maps and thematic maps. At the preparatory stage, a map of land units (LMU maps) was also made, which later this map would be used to determine soil samples in the field. The LMU map is obtained from the slope, land use, and soil type maps overlay.

The next stage is the primary survey stage, namely observation, measurement, and collection of biophysical data in the field. Soil sampling was carried out in two ways, namely for disturbed soil (using a drill) and taking intact soil (using a sample ring).

Comment [SS4]: The procedure data collection be prepared clearly, step by step of the work is mandatory. The data resource must be stated, every observation have to explain in detail

Data analysis

Assessment of land capability class in the research location was carried out on each land map unit by comparing land conditions with the land capability classification criteria proposed by Hockensmith and Steele (1943) and Klingebiel and Montgomery (1973) in Arsyad (2010) then an evaluation was carried out on the land in more detail. The land capability classification criteria used in this study can be seen in Table 1.

Table 1 Criteria for land capability classification (Arsyad, 2010)

Inhibiting / Limiting Factors	Land Capability Class							
	I	II	III	IV	V	VI	VII	VIII
1. Surface Slope	A (l_0)	B (l_1)	C (l_2)	D (l_3)	A(l_0)	E (l_4)	F (l_5)	G (l_6)
2. Erosion sensitivity	KE_1,KE_2	KE_3	KE_4,KE_5	KE_6	(*)	(*)	(*)	(*)
3. Erosion rate	e_0	e_1	e_2	e_3	(**)	e_4	e_5	(*)
4. Depth of soil	k_0	k_1	k_2	k_2	(*)	k_3	(*)	(*)
5. Top layer texture	t_1,t_2, t_3	t_1,t_2, t_3	t_1,t_2, t_3, t_4	t_1,t_2, t_3, t_4	(*)	t_1,t_2, t_3, t_4	t_1,t_2, t_3, t_4	t_5
6. Undercoat texture	sda	sda	sda	sda	(*)	sda	sda	t_5
7. Permeability	P_2,P_3	P_2,P_3	P_2,P_3, P_4	P_2,P_3, P_4	P_1	(*)	(*)	P_5
8. Drainage	d_1	d_2	d_3	d_4	d_5	(**)	(**)	d_0
9. Gravel/rock	b_0	b_0	b_1	b_2	b_3	(*)	(*)	b_4
10. Threat of flooding	O_0	O_1	O_2	O_3	O_4	(**)	(**)	(*)
11. Salt/salinity (***)	g_0	g_1	g_2	(**)	g_3	g_3	(*)	(*)

Source : Arsyad (2010)
Informatioan :
(*) = can have any properties;
(**) = not applicable
(***) = generally found in dry climates

Results

Land Map Unit

The results of overlaying land use maps with a scale of 1: 150,000, maps of soil types with a scale of 1: 150,000, and maps of slopes with a scale of 1: 150,000 yield 14 land map units (Table 2 and Figure 1). The characteristics of the land in the study location are dominated by dry land agricultural land, an area of 19100.28 ha with topography from 0-8% to 25-40%. Furthermore, the intensive observation for land capability assessment is SPL 2, 5, 6, 7, 8, 10, 11, 12, 13, and 14.

Comment [SS5]: ???

Discussion

Land Capability Analysis

The results of the analysis of land capability evaluation (results of field observations and analysis of soil samples) of each land map unit in the River Peusangan Hilir Sub-watershed were then assessed by land capability classification criteria (Arsyad, 2010) consisting of class II land capability covering an area of 16668.30 ha, class Land capability III is 4184.06 ha, land capability class IV is 4524.91 ha and land capability class VI is 190.79 ha with inhibiting factors of soil sensitivity to erosion (medium -very high) and slopes (wavy - rather steep) (Table 3).

Table 2. Land Map Units in The Krueng Peusangan Hilir Sub-Watershed

SPL	Land Use	Type of Land	Slope (%)	Areas	
				Ha	%
1	Settlement	Inceptisol	0 - 8	957.11	3.27
2	Wetland Agriculture	Inceptisol	0 - 8	5145.40	17.58
3	Water Body	Inceptisol	0 - 8	281.84	0.96
4	Pond	Inceptisol	0 - 8	2359.15	8.06
5	Shrubs	Inceptisol	0 - 8	526.84	1.80
6	Dryland farming	Inceptisol	15 - 25	1961.01	6.70
7	Dryland farming	Inceptisol	25 - 40	190.79	0.65
8	Wetland Agriculture	Inceptisol	8 - 15	216.87	0.74
9	Swamp	Inceptisol	0 - 8	101.56	0.35
10	Open field	Inceptisol	0 - 8	578.67	1.98
11	Dryland farming	Inceptisol	0 - 8	10996.05	37.57
12	Dryland farming	Ultisol	25 - 40	2563.90	8.76
13	Dryland farming	Inceptisol	8 - 15	2180.92	7.45
14	Dryland farming	Ultisol	8 - 15	1207.61	4.13
	Total			29267.72	100.00

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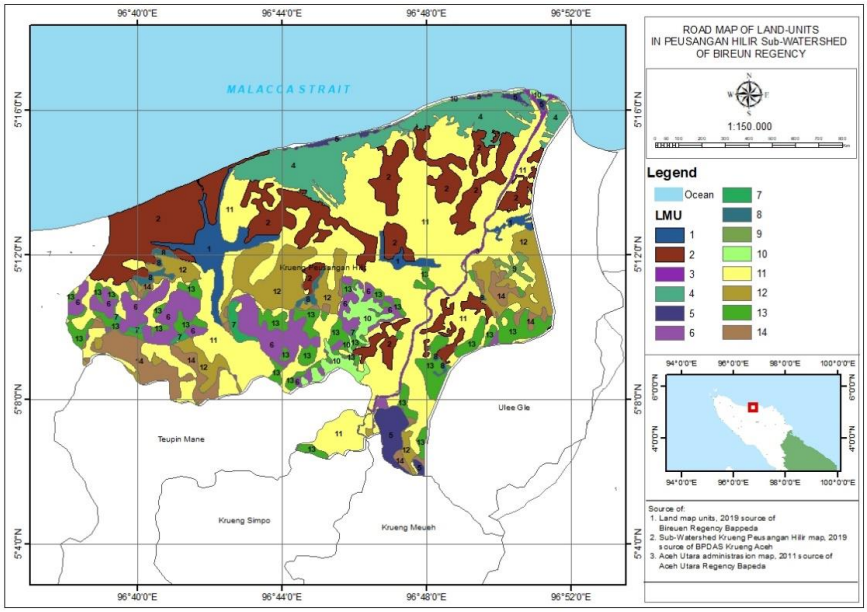

Figure 1. Land Map Unit Map in the downstream Peusangan sub-watershed, Bireuen Regency

Comment [SS7]: The title of the " The road-map of land unit, ????, or the The map of Land Unit…..

The soil erodibility factor (soil sensitivity to erosion) generally occurs due to the rainfall factor. In tropical countries such as Indonesia, the strength of falling rainwater and the ability of surface runoff to erode the soil surface are the main destroyers of soil aggregates (Muliatiningsih & Zulaeha, 2018). According to Harahap et al. (2021), apart from soil properties, soil management/treatment factors also significantly affect the level of soil erodibility. Furthermore, Sinaga et al. (2020) added that soil with high dust content is the most eroded soil. The effort that needs to be made on the limiting factor of credibility is by adding organic matter to maintain the stability of the soil aggregate.

Table 3. Land Capability Classes in the Krueng Peusangan Hilir Sub-watershed

Land Capability Class	Land Map Unit	extensive	
		Ha	%
II l_1,KE_3	2, 5, 11	16668.30	65.19
III l_2	8, 13, 14	3605.39	14.10
III KE_4	10	578.67	2.26
IV l_3	6	1961.01	7.67
IV l_3, KE_6	12	2563.90	10.03
VI l_4	7	190.79	0.75
Total		25568.07	100.00

Note : Roman numerals indicate land capability class; KE = soil erodibility inhibiting factor; l = inhibiting factor of the slope; Latin numerals indicate the level of the inhibiting factor.
Source: Analysis of primary data (2022).

This is in accordance with the opinion of Vorone et al. (1981) soil erodibility decreased linearly with the increase or addition of organic matter in the soil. Some research results also show that soils with high organic matter content have high erodibility (Asdak, 2022). For the limiting factor of slopes in land capability classes II, III, IV and VI that are found in all SSTs, if this SST is used for agricultural cultivation, soil conservation measures are needed such as making mound terraces or canal mound terraces, planting in strips and using mulch (Arsyad et al., 2018)

Land Use Directives

Directions for land use that need to be carried out in the Peusangan Hilir Sub-watershed for land capability class II if it is continued with land use for agriculture need to be carried out with moderate soil conservation measures, namely with a crop rotation cropping pattern and additional treatment with ground cover plants, land for capability class III with the use open land and dry land agriculture the land use directions are still for agricultural areas accompanied by the provision of mulch as much as 6 tons/ha and the making of rorak (Murtilaksono et al., 2008).

Whereas for capability class IV land the land use directives that need to be carried out are to carry out an agroforestry model cropping pattern which is included with the creation of individual terraces and capability class VI land which has a rather steep slope limiting factor so it should be directed to pasture or grazing land and this must also properly managed to prevent erosion

Comment [SS8]: How to determine the land capability classes in this table?, while the data of the observation according to parameters in table 1 are not show the paper, Author have to include all data observation in order to classify the land capability classess

Comment [SS9]: ???

Comment [SS10]: ???

Comment [SS11]: Land use directives in the paper completely from the theory, from the citation, the author have to state that the land directive in specifically and comprehensively according to the situation the research location study and in detail. So that the directive can apply by the whole stakeholder in the watershed

Conclusions

1. The results showed that the land capability class consisted of 16668.30 ha II lan capability class, 4184.06 ha III land capability class, 4524.91 ha IV land capability class, and 190.79 ha VI land capability class with soil erodibility inhibiting factors (moderate - very high) and slopes (wavy - rather steep)
2. The effort that needs producing on the limiting factor of soil erodibility is by applying organic matter to maintain the stability of soil aggregates, while for the limiting factor of slopes, the soil conservation measures that need to stand done are by making mound terraces or canal mound terraces, planting in strips and using mulch
3. Directives for land use for class II, namely with moderate soil conservation measures, namely by crop rotation cropping patterns and additional treatment with ground cover crops, class III can be directed to agricultural areas accompanied by the provision of mulch as much as 6 tons/ha and doing work, class IV directs the agroforestry model planting pattern to be carried out which is included with the creation of individual terraces and class VI land is directed to pasture or grazing and this must also be adequately managed to avoid erosion

References

Arsyad, S. (2010). Soil and Water Conservation. Bogor: Serial Library IPB Press.

Arsyad, U., Umar, A., & Wirawan, R. A. 2018. Land Use Patterns Based on Land Capability Classes in the Upper Kunisi Watershed, Jeneberang Watershed, Gowa Regency. Journal of Forests and Society, pp. 164–173.

Asdak C. 2022. Hydrology and Watershed Management. Yogyakarta. Gadjah Mada UniversityPress.

[BPDAS] Krueng Aceh Watershed Management Office. 2020. Database and information.

Fitri, R., Damayanti, A., Simangunsong, N.I., Munawir. 2022. Land Use Prediction Using Markov – Cellular Automata in the Peusangan Watershed, Aceh. Aceh Int. J. Sci. Technol., 11(3) 197-209.

Fitri, R., Hartoyo., A.P.P., Mangunsong., N.I., Satriawan, H. 2020. Impact of agroforestry on the quality of Ciliwung Hulu Watershed, West Java. Jurnal Penelitian Pengelolaan Daerah Aliran Sungai, 4 (2): 173-186. doi https://doi.org/10.20886/jppdas.2020.4.2.173-186.

Government Regulation of the Republic of Indonesia Number 37 of 2012 concerning Watershed Management. March 1, 2012.

Harahap, A. P., Rauf, A., & Mulya, M. B. 2021. Conditions and Management of the Upstream Area of the Belawan Watershed in Relation to the Level of Erosion Hazard on Cultivation Land in Deli Serdang Regency. Serambi Engineering Journal, 6(3).

Hardjowigeno, S. 2010. Soil Science. Jakarta: Prescindo Academica.

Hardjowigeno, S. and Widiatmaka. 2015. Evaluation of Land Suitability and Land Use Planning. Gadjah Mada UniversityPress. Yogyakarta.

Ilhamsyah, Y., Koem, S., Muttaqim, S. 2012. Application of HBV hydrological model in Peusangan Watershed Aceh as a preface study to the development of sustainable ecohydrological concept. Depok,1(2): 86-92.

[KLHK] Ministry of Environment and Forestry. 2015. Regulation of the Director General for Control of Watersheds and Protected Forests, Number: P 10 /PDASHL-SET/2015 concerning the Strategic Plan of the Directorate General for Control of Watersheds and Protected Forests for 2015-2019. Jakarta (ID; KLHK.

Muliatiningsih, and Zulaeha. 2018. Study of Soil Erodibility Index in Several Cropping Pattern Systems Journal of Agrotek Ummat 5.1 (2018): 69–72.

Murtilaksono, K., E.S. Sutarta, H.H. Siregar, W. Darmosarkoro, and Y. Hidayat. (2008). Application of Techniques v Soil and Water Conservation in Efforts to Suppress Runoff and Erosion in Oil Palm Plantations. Proceedings of the Sixth MKTI Seminar and National Congress, 17-18 December 2007, Cisarua Bogor: 165–171.

Sinaga, S., Amelia, V., & Batubara, R. D. (2020). The Effect of Land Use and Slope on the Physical Properties of Soil in Kurun District, Gunung Mas Regency. Agrienvi: Journal of Agricultural Sciences, 14(2), 59–65.

Sinukaban N. 1997. Using the WEPP model to predict erosion in the Collate Information and Analyzed Assessment Effect of Land Use on Soil Erosion. Forest Research Center.

Vorone RP, Van ven JA and Paul EA. 1981. Organic carbon dynamics and grassland soil. Model validation and simulation of the long-term effects of cultivation and rainfall erosion. Canadian journal of soil science. (61): 211-224

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Halim Halim Akbar:

We have reached a decision regarding your submission to Aceh International Journal of Science and Technology, "Land Capability and Land Use Direction Assessment in the Peusangan Hilir Sub-watershed, Bireuen Regency".

Our decision is: Revisions Required

Dr. Sugianto Sugianto
Editor in Chief
Universitas Syiah Kuala
sugianto@usk.ac.id

Reviewer A:

The research on Land Capability and Land Use Direction Assessment in the Peusangan Hilir Sub-watershed, Bireuen Regency. Overall, the study is good, the results section well-presented, however the discussions are not presented comprehensively yet. However, in my opinion, in order to be fit and appropriate for publication, the manuscript would need some corrections and revisions. Thus, the following minor and major comments should be addressed:

Authors should correct the abstract, as comment in the manuscript

The author suggested to complete the introduction to include: What is being studied? what the previous studies have been done of this topic as a comparison and what is the gap research, and to include the purpose the study at the end of the introduction part

Authors should prepare the material and method in detail, please state step by step clearly

In the result the author has to include the data observation of the parameter in table 1 to classify the land capability of the watershed

In the result and discussion, authors have to consider to discuss more (deeper).

Finally, due to this paper still has grammar and language issues, which need to be addressed, it is strongly advised the authors to proofread of this manuscript