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**THE ANALYSIS OF LAND USE WEIGHTS ON
ROAD TRACES SELECTION**

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INTRODUCTION

- Land use and economic growth factors are among the factors that must be considered in determining road traces
- Where land use is a pattern of area use associated with human activities
- Land use will automatically include the concept of optimization, evaluation, and land planning.

INTRODUCTION

- At this time development in the swamp area is more massively done considering the land in the increasingly limited productive areas and the government continues to develop swamp areas both in the agricultural sector, plantations, and fisheries.
- To support the development in this swamp area of course road infrastructure is needed.
- Roads built should pay attention to economic factors and environmental conditions to achieve sustainable development, therefore it is necessary to analyze land use in selection traces of roads, especially in swamp areas.

RESEARCH METHODOLOGY

- The goal of this study is to obtain the weight of land use from stakeholders in the selection of road traces especially in swamp areas, where the classification of land use taken is based on previous research results that divide land use in swamp areas into 6 classes, namely forest, plantation, rice field, shrubs/ bushes, settlements, and water body [1] [2] [13].
- This research is a follow-up study to find the suitability of road trace in swamp area which has been done by previous researcher so that the land use used refers to the result of the research.



Why in swamp area ?

- Indonesia has wide swamp areas
- South Sumatra is one of the provinces which has quite large swamp.
- It is about 613,795 hectares consisting of 455,949 hectares of tidal swamp, and 157,846 hectares non tidal swamp (BWS, 2015)
- Swampy area is being developed by the government for agriculture, plantation and fishery areal (Ismail et al, 1993).

Population and Sample:

- ✓ The stakeholders who are respondents in this research are people related to the road and environmental field, against the background of the Department of Public Works and Highway, the Department of Environment/environmental consultants that consisting of Head of Department, Head of Division/Section and Head of Sub-Section of each agency, while from the college background there are lecturers with doctorates and professors who are masters at road and environmental issues.



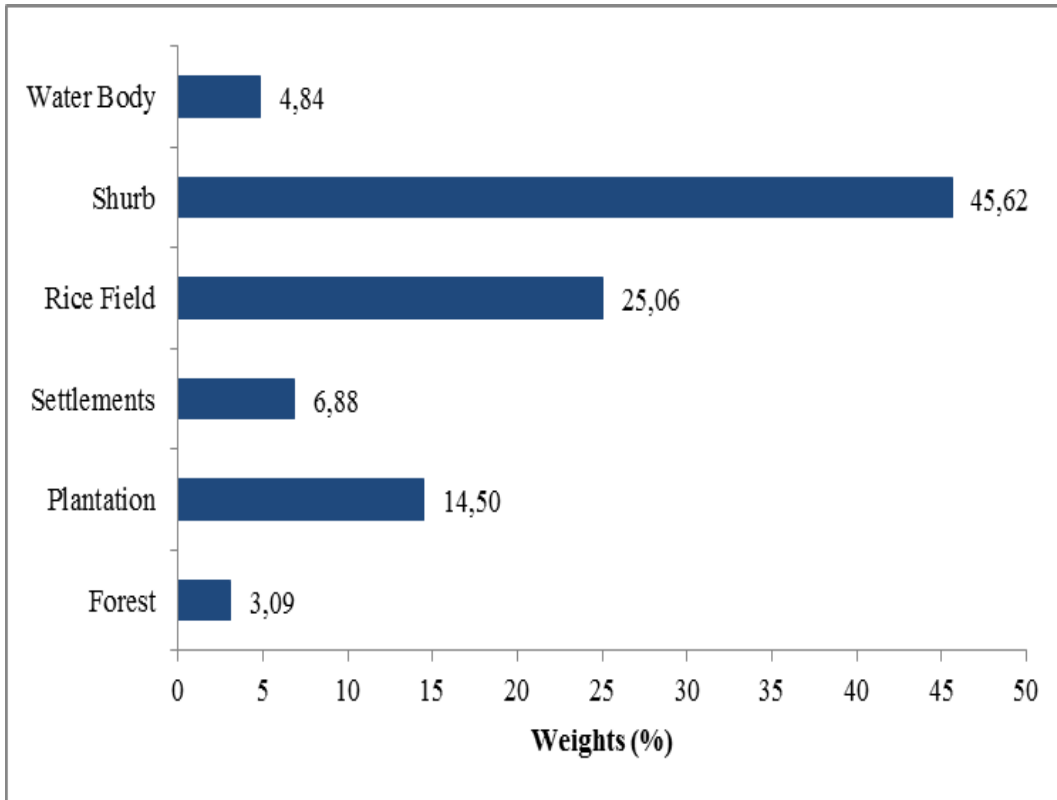
Population and Sample:

- ✓ To support accurate results, the questionnaires were distributed in two provinces, namely South Sumatra and West Kalimantan, as these two provinces have the largest swamp areas in Indonesia.
- ✓ To be able to know the tendency of assessment of the respondents based on the background of work, the initial weighting assessment will be separated against each background, furthermore a combined weighting will be done, and that will be the basis for the selection of road traces on the swamp areas based on land use.

Analysis Data

- ❖ The data collection was done by distributing questionnaires to the respondents with the question: "based on your opinion which area is best suited to be chosen as road traces in the swamp area", where level of conformity of land use is assessed based on a scale of 1 to 9, namely: 3 relatively important, 5 more important, 7 is very important, and 9 is much more important. While the importance level 2,4,6,8 are inter values.
- ❖ The answers obtained are analyzed using the AHP method for the priority level of the importance of land use in the selection of road traces in the swamp area, then each assessment of the respondents will be tested for consistency because in the AHP method logical consistency indicates consistency or lack of assessment.

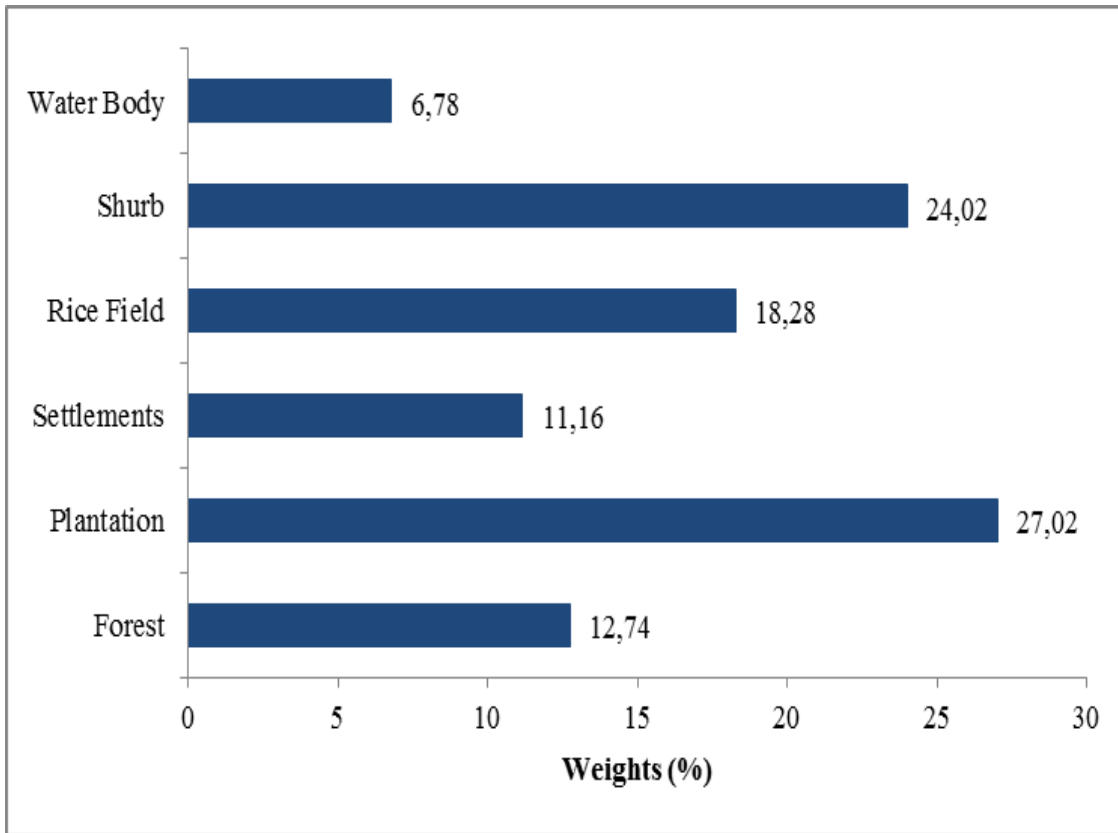
RESULT 1



The weighting of land use from the Department of Public Works and Highway background

This graph shows the highest to the lowest order of weights to consider in determining the road traces is the shrub/bushes, plantation, rice field, settlements, forest, and water body. It can be seen that stakeholders of the Department of Public Works and Highway would prioritize the shrub/bushes for the road traces selection, this is due to economic considerations that land acquisition in bush/shrub areas will be cheaper so that it is more efficient, as well as on the sequence of other land uses, this consideration is more on the cost of more economical land acquisition.

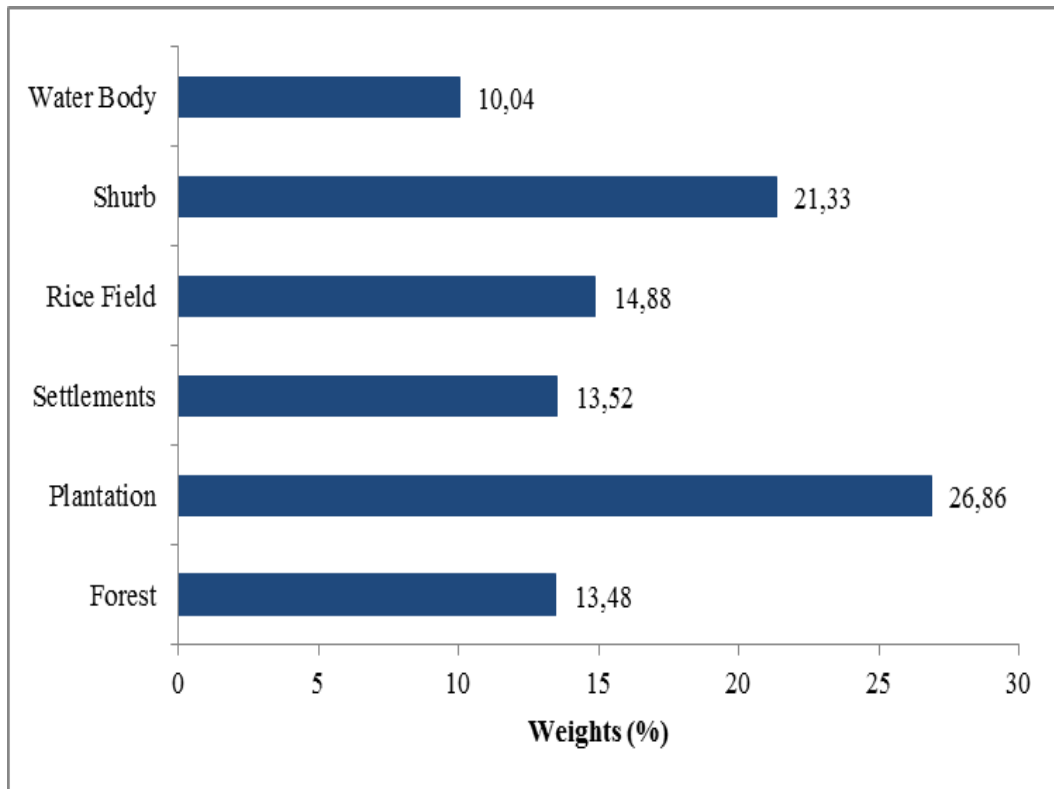
RESULT 2



The weighting of land use from the Department of Environment/environmental consultants

This graph shows the highest to the lowest order of weights to consider in determining the road traces is the plantation, shrub/bushes, rice field, settlements, forest, and water body. From these results, it can be seen that the stakeholders of the Environmental Department / environmental consultant, will prioritize plantations in the selection of road traces, considering that the plantation area is the dominant area in the swamp area, so that road infrastructure is needed to support the marketing of the products, this is closely related to the socio-economic factors of a region.

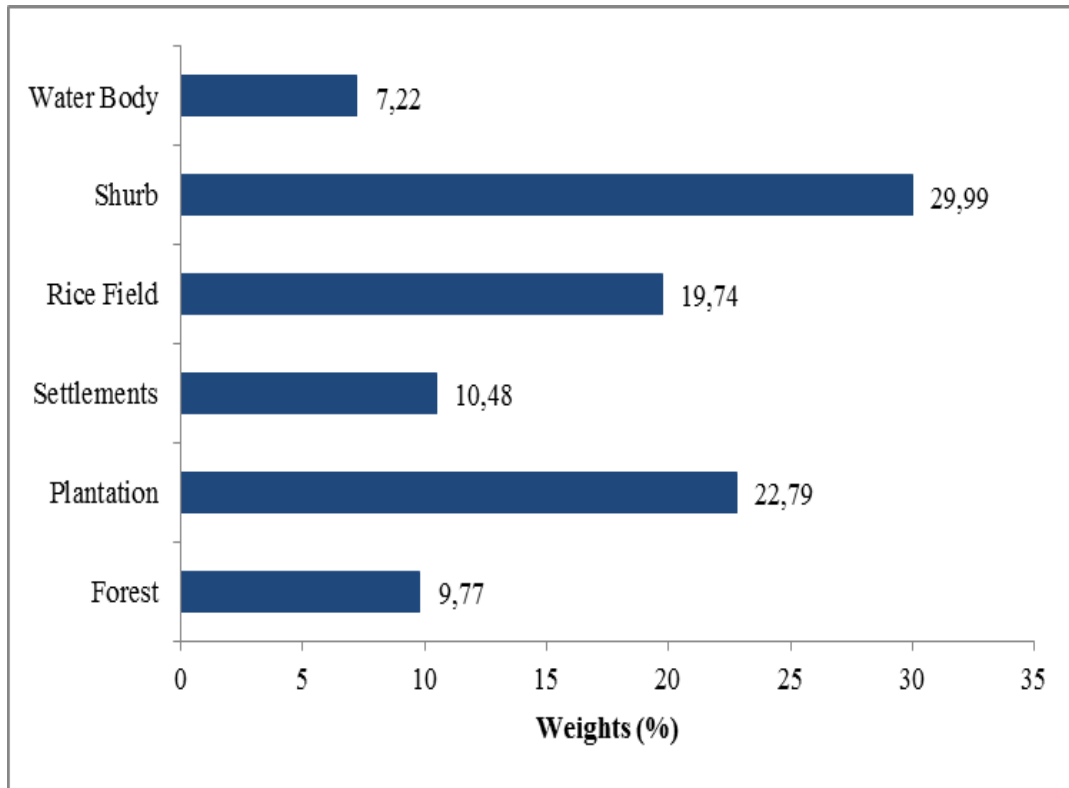
RESULT 3



The weighting of land use from the college background

This graph shows that the highest to the lowest order of weights to consider in determining the road traces is plantation, shrub/bushes, rice field, settlements, forest, and water body, when this is viewed in the order of land use priorities, are similar to stakeholder assessments from the Department of Environment/environmental consultants background.

RESULT 4



The combined weighting results

The results of the combined assessment obtained shows the highest to the lowest order of weights to consider in determining the road traces in swamp area shrub/bushes, plantation, rice field, settlements, forest and water body.

DISCUSSION

The weighting and ranking of land use assessment

No	Criteria	Weights (%)	Rank
1	Forest	9.77	5
2	Plantation	22.79	2
3	Settlements	10.48	4
4	Rice Field	19.74	3
5	Shrub/Bushes	29.99	1
6	Water Body	7.22	6

DISCUSSION

- From the analysis result, those that have the rank of conformity priority of road trace selection based on land use were shrubs/bushes, plantation, rice field, settlements, forest, and water body (river). If evaluated from the prevailing regulations on the determination of the road traces, then the road built should pay attention to land use, where the focus of the selection of land use is the cost of land acquisition, while the other factor is the socio-economic environment factor [15].

DISCUSSION

- This is in line with the results of the assessment of the stakeholders that the first order in the selection of road trails is shrubbery, because land acquisition will be cheaper when compared with other areas.
- And in the last order is the water body (river) with consideration that the costs incurred can be larger because it should consider the cost of the construction of the bridge, other than that, the pattern of settlements in the swamp or lowlands tend to follow the pattern of the river's flow [11][12] so that they utilize river transportation more in their activities

CONCLUSION

The order of importance of land use base on weights value in the selection traces of the road in swamp areas namely :

- shrub/ bushes (29.99%)
- plantation (22.79%)
- rice field (19.74%)
- settlements (10.48%)
- forest (9.77%)
- water body (9.70%)

**Any Questions
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**Any Suggestions
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**Thank You For
Your Attention**

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