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HASIL PENILAIAN SEJAWAT SEBIDANG ATAU PEER REVIEW
KARYA ILMIAH : PROSIDING**

Judul karya ilmiah (paper) : Drought Disaster Vulnerability Mapping of Agriculture Sector in Bringin District, Semarang Regency

Jumlah Penulis : 2 orang

Status Pengusul : Penulis kedua (D.R Lestari, **Bitta Pigawati**)

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Nilai Pengusul :	$40 \times 27,25 = 10,9$		

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Semarang, 26-07-2019
Reviewer 2,

Dr. sc. agr. Iwan Rudiarto, ST, MSc
NIP. 197403271999031002
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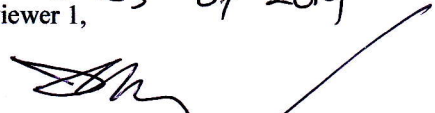
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Volume 123, Issue 1, 22 February 2018, Article number 012031
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Java; Indonesia; 9 August 2017 through 10 August 2017; Code 134955

Drought disaster vulnerability mapping of agricultural sector in Bringin District, Semarang Regency (Conference Paper) [\(Open Access\)](#)

Lestari, D.R.^a , Pigawati, B.^b

^aUrban and Regional Planning Department, Diponegoro University, Semarang, Indonesia

^bGeomatics and Computing Planning Laboratory, Urban and Regional Planning Department, Diponegoro University, Semarang, Indonesia

Abstract

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Agriculture sector is a sector that is directly affected by drought. The phenomenon of drought disaster on agriculture sector has occurred in Semarang regency. One of districts in Semarang which is affected by drought is Bringin district. Bringin district is a productive agricultural area. However, the district experienced the most severe drought in 2015. The question research of this study is, "How is the spatial distribution of drought vulnerability on agriculture sector in Bringin district, Semarang regency?" The purpose of this study is to determine the spatial distribution of drought vulnerability on agriculture sector to village units in Bringin district. This study investigated drought vulnerability based on Intergovernmental Panel on Climate Change (IPCC) by analyzing exposure, sensitivity, and adaptive capacity through mapping process. This study used quantitative approach. There were formulation analysis, scoring analysis, and overlay analysis. Drought vulnerability on agriculture sector in Bringin district was divided into three categories: low, medium, and high. © Published under licence by IOP Publishing Ltd.

SciVal Topic Prominence

Topic: Adaptation | Climate change | Adaptation planning

Prominence percentile: 99.844

Author keywords

[Agriculture](#) [Drought](#) [Semarang](#) [Vulnerability](#)

Indexed keywords

Engineering controlled terms: [Agriculture](#) [Climate change](#) [Disasters](#) [Mapping](#) [Spatial distribution](#) [Surveying](#)

Engineering uncontrolled terms: [Adaptive capacity](#) [Agricultural areas](#) [Agricultural sector](#) [Agriculture sectors](#) [Intergovernmental panel on climate changes](#) [Quantitative approach](#) [Semarang](#) [Vulnerability](#)

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GIS-based Landslide Susceptibility Assessment and Factor Effect Analysis by Certainty Factor in Upstream of Jeneberang River, Indonesia

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This study assesses the potentiality of certainty factor models (CF) for select the positive causative factors related to landslide occurrence combine with logistic regression to generate the landslide susceptibility mapping in Upstream of Jeneberang River, South Sulawesi, Indonesia. Effect analysis studies show how a solution changes when the input factors are changed. The factors were chosen that influence landslide occurrence was: Soil, Slope angle, Aspect, Elevation, Lithology, Land use, Distance to the river, Drainage density, Precipitation. For the validation purpose, landslide inventory map was randomly partition into two groups, 30% for the validation and 70% for the training. Landslide susceptibility maps were produced by logistic regression using original factor (all nine factors) and selected factor (selected four factors with positive CF value). The result of certainty factor analysis shows CF value is positive for elevation, land use, slope, and drainage density. The accuracy of two landslide susceptibility map was evaluated by calculating the ROC analysis. The result shows the success rate curve for nine-factor map (80.2%) is higher than four-factor map (78%). But in case of predictive rate curve, four factors map (70.6%) is higher than nine factors map (66.9%). The closeness of success rate and predictive rate values is important because it shows how the logistic regression helps to predict the landslide occurrence in the future.

Keywords: Landslide susceptibility map, GIS, Certainty factor

Performance of Land Use Change Causative Factor on Landslide Susceptibility Map in Ujung-Loe Watersheds South Sulawesi Indonesia

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The aim of this study is to develop and apply land use change (LUC) performance on landslide susceptibility map by using FR, and LR method in a geographic information system. In the study area, Upper Ujung-loe Watersheds area of Indonesia, landslides detected by using field survey and air photography from time series data image of google earth pro in 2012 – 2016 and use LUC from 2004 to 2011. Landslide susceptibility map (LSM) were building by using FR, and LR with nine causative factor. The result indicated LUC have the effect to produce LSM. Validation of landslide susceptibility was carried out in this study at both with and without LUC causative factor. First, performances of each landslide model were tested using AUC curve for success and predictive rate, which is the highest value of predictive rate at With LUC in both FR and LR method (83.4% and 85,2%, respectively). In the second stage, the ratio of landslides falling on high to a very high class of susceptibility was obtained, which indicates the level of accuracy of the method and LR method with LUC have the highest accuracy of 80.24 %. It is indicated changing the vegetation to another landscape, make slopes unstable and probability to landslide occurrence

Keywords: Landslide Susceptibility Map, Land Use Change, Indonesia

Risk Sensitive Land Use Planning in Malinao, Albay, Philippines

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Malinao lies along the typhoon belt especially since its eastern portion faces the Pacific Ocean has always been vulnerable to disaster, natural or man-made, all year round. Idealistic highest-best land use planning approach is a way to measure spatial justice in contrast with realistic cultural land utilization practices in the Philippines is inciting. Risk sensitive land use planning intends to point out the consequences of unjust or unsuitable land allocation that may prejudice the lives of the vulnerable populace. This land use plan refers to a document embodying specific proposals for guiding, regulating growth and development shaped into spatial dimensions and space allocation required for socio-economic development. It was formulated using ArcGIS to synthesis the different data gathered through the different agencies and offices and the inputs of concerned agencies and stakeholders. The land use plan incorporates disaster risk factors in the analysis of existing and potential land use patterns by using GIS overlay techniques. The public hearing, review and approval, and local publication of the land use plan along with its zoning ordinance were pushed by a natural hazard event which hit the Municipality of Malinao, Albay, Philippines in 2011. Both technical and legal documents serves as the framework and policies regarding the utilization of land and resources to ensure that development targets are met while still preserving the integrity of the environment and preventing or reducing disaster risks that may be brought by natural calamities.

Mapping and Assessment of Traffic Congestion on Major Roads in Minna (Case Study of Chanchaga L.G.A)

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The level of urbanization in the developing world indicates that more people live in cities than before. As urbanization increases, road usage also increases proportionately which sometimes introduces some strain to the existing road which often constitutes some impediments to free traffic flow. The situation described above is on the increase in Chanchaga Local Government Area of Niger State, an urban center in Nigeria. In order to investigate the probable causes and degree of severity of this menace, attempt has been made in this research to investigate and map out the nature of traffic congestion frequently experienced on some selected roads within Chanchaga LGA. These road networks include: Kpakungun - Gidan Kwano road, Bosso-Mobil route, Bosso – Mekunkele route, Kpakungun – city gate road and Book roundabout – Mobil Route. Using a 1m Pan-Sharpned spatial resolution IKONOS Image, handheld GPS receivers, and manual traffic count, the traffic patterns of the selected road networks within the study area were assessed and mapped out. A Geo-Database was also designed for the routes which provides information about the road pavement condition, average traffic volume, adjacent land use, etc. Analysis of results and other queries performed revealed that the most probable causes of traffic congestion in Chanchaga LGA include narrow road width, bad road pavement and indiscriminate parking of vehicles along the road corridors, especially by commercial cab drivers.

Keywords: Urbanization, Traffic Mapping, Geospatial modeling, dynamic road segmentation, land use, Traffic Information System

Land Use Land Cover Changes and Prediction of Dodoma, Tanzania

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This study looks at land use/cover changes (LUCC) of Dodoma region and the urban expansion of Dodoma over a period of 21 years (2005 - 2026) using approaches based on the remotely sensed images and GIS. The main aim of this study is to examine the current and potential development of Dodoma region. This study first uses remote sensing to detect LUCC and then based on the result of classification images, predicts the 2026 LUCC using neural network built-in module in IDRISI. Analysis is also done using Markov to generate Transitional Probability Matrix and Transitional Area Matrix for the year 2026. Understanding the present and predicted development situation in Dodoma will help planners develop new strategies to reshape the capital city of Tanzania.

Keywords: Dodoma, GIS, remote sensing, land use, land cover, urban expansion

Drought Disaster Vulnerability Mapping of Agriculture Sector in Bringin District, Semarang Regency

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Agriculture sector is a sector that directly affected by drought. The phenomenon of drought disaster on agriculture sector has occurred in Semarang regency. One of districts in Semarang which affected by drought is Bringin district. Bringin district is a productive agricultural area. However, the district experienced the most severe drought in 2015. The question research of this study is, "How is the spatial distribution of drought vulnerability on agriculture sector in Bringin district, Semarang regency?" The purpose of this study is to determine the spatial distribution of drought vulnerability on agriculture sector to village units in Bringin district. This study investigates drought vulnerability based on Intergovernmental Panel on Climate Change (IPCC) by analyzing exposure, sensitivity, and adaptive capacity through mapping process. This study uses quantitative approach. There are formulation analysis, scoring analysis, and overlay analysis. Drought vulnerability on agriculture sector in Bringin district is divided into three categories: low, medium, and high.

Keywords: Agriculture, Drought, Semarang, Vulnerability

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