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

Judul karya ilmiah (paper)	: The Settlements Growth in Mijen District, Suburb of Semarang		
Jumlah Penulis	: 3 orang		
Status Pengusul	: Penulis pertama (**Bitta Pigawati**, Nany Yuliastuti, Fadjar Hari M)		
Identitas prosiding	:	a. Judul Prosiding	: Prosiding The 2nd Geoplanning International Conference 2017
		b. ISBN/ISSN	: e.1755-1315,p.1755-1307
		c. Tahun Terbit/tempat pelaksanaan	: Vol.55 Converence 1,2018
		d. Penerbit/organiser	: IOP Publishing
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Dr.sc.agr. Iwan Rudiarto, ST, MSc
NIP. 197403271999031002
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Prof. Dr.rer nat Imam Buchori, ST
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IOP Conference Series: Earth and Environmental Science
Volume 123, Issue 1, 22 February 2018, Article number 012034
2nd Geoplanning - International Conference on Geomatics and Planning; Surakarta - Central Java; Indonesia; 9 August 2017 through 10 August 2017; Code 134955

The Settlements Growth in Mijen District, Suburb of Semarang (Conference Paper) (Open Access)

Pigawati, B., Yuliastuti, N., Mardiansjah, F.H.

Departmen of Urban and Regional Planning Engineering, Faculty of Engineering, Diponegoro University, Indonesia

Abstract

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Semarang is one of metropolitan cities in Indonesia. As common in metropolitan cities, Semarang has problems regarding the availability of urban space, especially for settlements. This is related to the increase of population in Semarang. The selection of settlements should consider the suitability of space usage. This study aimed to analyze the growth of Semarang settlements in 2006-2015, distribution patterns, characteristics, directions and factors affecting growth. The location of the research is Mijen District located in Suburb of Semarang. This research used a quantitative descriptive spatial approach by using remote sensing technique and Geographic Information System (GIS). The results showed that some of the growth sites of settlements in Mijen District, the suburb of Semarang are located in areas which not suitable for settlements. There are several types of settlement patterns in Mijen District. Accessibility is the major factor driving the growth of settlements. An integrated development policy is needed to maintain a sustainable balance of urban settlement development. © Published under licence by IOP Publishing Ltd.

SciVal Topic Prominence

Topic: Urban sprawl | Urban growth | Urbanization

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Author keywords

Semarang City | Settlement Growth | Suburban Area

Indexed keywords

Engineering controlled terms: Surveying

Engineering uncontrolled terms: Distribution patterns | Integrated development | Metropolitan cities | Remote sensing techniques | Semarang City | Settlement development | Settlement patterns | Suburban areas

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Scopus

Source details

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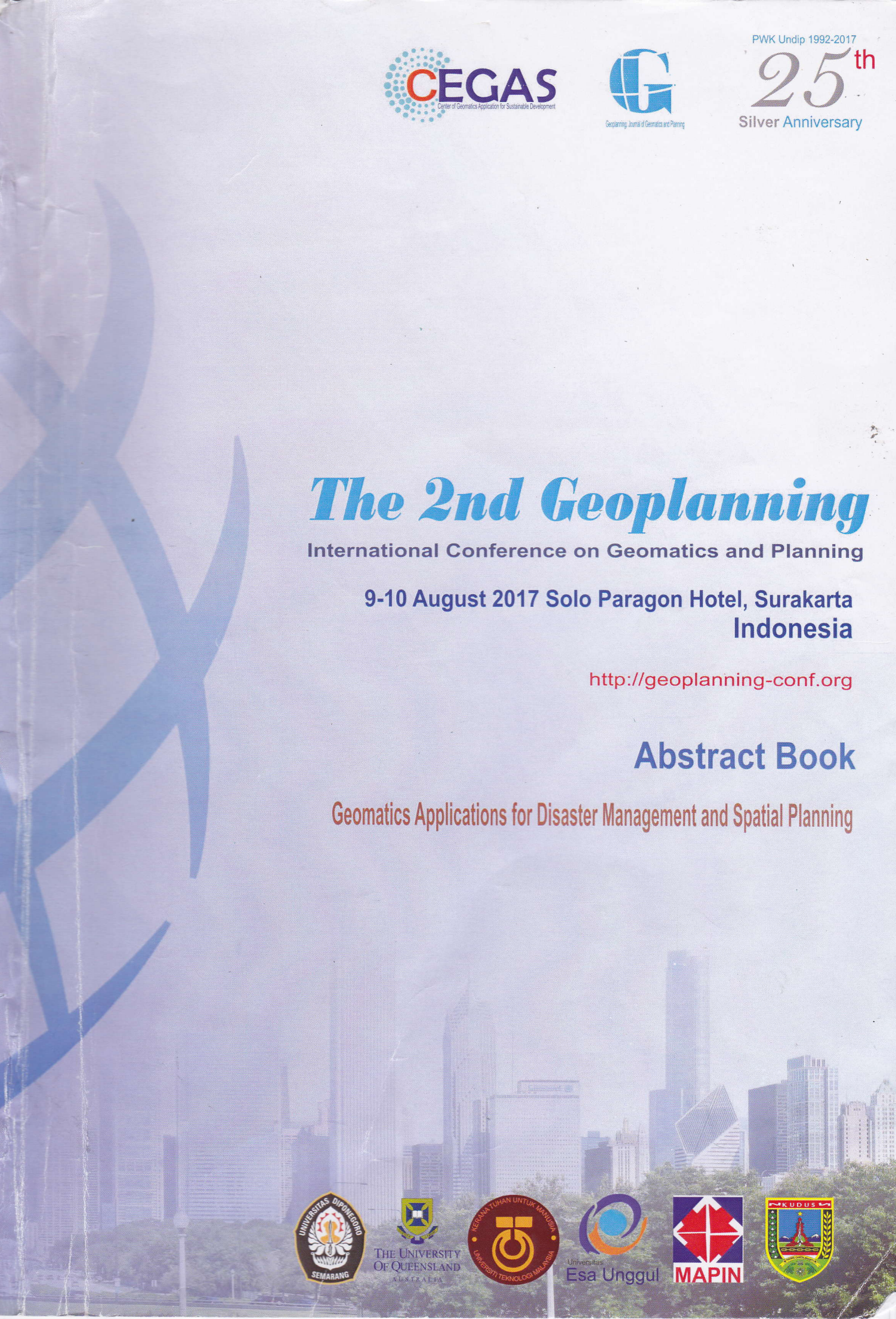

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TABLE OF CONTENT

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

Putri Fatimah Nurdin, Tetsuya Kubota

Kyushu University, Japan

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

Andang Suryana Soma, Tetsuya Kubota

Kyushu University, Japan

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

Ana Marie Rico Abante
Bicol University, Philippines

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)

Oluibukun Gbenga Ajayi [1], Ayodeji Timothy Oluwunmi [1],
Yusuf Drisu Opaluwa [2], Taiwo James Adewale [1]
1 Department of Surveying and Geoinformatics, Federal University of Technology, Minna
2 Department of Surveying and Geoinformatics, Moshood Abiola Polytechnic, Ogun State.

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-Sharpened 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

Tabaro Hashim Kabanda
North West University, South Africa

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

The Growth of Settlements in Mijen District, Suburb of Semarang

Bitta Pigawati, Nany Yuliastuti, Fadjar Hari Mardiansjah
Diponegoro University, Indonesia

Semarang is one of metropolitan city in Indonesia. As is common in metropolitan cities, Semarang has problems regarding the availability of urban space, especially for settlements. This is related to the increase of population in Semarang. The selection of settlements should consider the suitability of space usage. This study aims to analyze the growth of Semarang settlements in 2006-2015, distribution patterns, characteristics, directions and factors affecting growth. The location of the research is Mijen District located in Suburb of Semarang. This research uses a quantitative descriptive spatial approach using remote sensing technique and Geographic Information System (GIS). The results showed that some of the growth sites of settlements in Mijen District, the suburb of Semarang are located in areas not suitable for settlements. There are several types of settlement patterns in Mijen District. Accessibility is a major factor driving the growth of settlements. An integrated development policy is needed to maintain a sustainable balance of urban settlement development

Keywords: settlement growth, suburban area, Semarang City

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