DIPONEGORO UNIVERSITY

ASSESSMENT OF INDUSTRIAL ZONES IN SPATIAL PLAN THROUGH THE MODELING OF INDUSTRIAL GROWTH IN SEMARANG METROPOLITAN COAST

UNDERGRADUATE THESIS

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DEPARTEMENT OF URBAN AND REGIONAL PLANNING

SEMARANG

JULY 2020

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Submitted as one of the requirements to get a Bachelor's degree

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PAGE OF ORISINALITY STATEMENT

This undergraduate thesis entitled **"Assessment of Industrial Zones in Spatial Plan through The Modeling of Industrial Growth in Semarang Metropolitan Coast"** is my own work, and guided by **Prof. Dr. rer. nat. Imam Buchori, ST** and I have stated all the sources, both cited and referred correctly.

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PUBLICATION AGREEMENT STATEMENT PAGE

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ASSESMENT OF INDUSTRIAL ZONES IN SPATIAL PLAN THROUGH THE MODELING OF INDUSTRIAL GROWTH IN SEMARANG METROPOLITAN COAST

Tiara Ika Fariha

Abstract

Central Java Province has the manufacturing sector as the largest economic contributor of 34.42% with a growth rate of the manufacturing industry sector of 5.19%. The growth of the industrial sector is mainly supported by the infrastructure contained in the northern coast of Central Java Province (Kendal-Semarang-Demak). Strategic location and supported by infrastructure ranging from the North Coast Road, the Trans Java Highway, Ahmad Yani International Airport and Tanjung Emas port increase the industrial growth in this region. However, the high increase in industrial built up area in Semarang Metropolitan Coast has an impact on the conversion of coastal land if the growth cannot be controlled through the implementation of spatial plan. Based on the phenomena and problems that occur related to industrial growth in the Semarang Metropolitan Coast, this research needs to be carried out to identify the direction and trends of industrial growth in 2015-2020 and the growth predictions in 2030 for assessing the industrial zones in spatial plan 2011-2031.

This research consist the estimation of industrial built up area growth using combination of GeOBIA method and manual interpretation of high-resolution satellite imagery (Sentinel-2A) from 2015 to 2020 and assessment of industrial zones in spatial plan based on the industrial growth prediction model in 2030 using the Cellular Automata Markov (CA-Markov). Growth models show an increase of industrial built up area by 294.16 hectares in 2015-2020 and it predicted will be increase of 512.62 hectares in 2020-2030. Industrial built up area tends to growth towards the eastern and western part of Semarang Metropolitan Coast based on map distribution and area growth. Industrial growth on Semarang Metropolitan Coast also has an influence on the increase of 151.32 ha of built up area in 2015 to 2020. In 2020 there are 21.02% of industries that not suitable with spatial plan and predicted will be increased to 28.34% in 2030, it is necessary for government to increase the efforts to control the spatial use.

Keywords : Industrial Growth, Coastal Area, GeOBIA, CA-Markov

PREFACE

Alhamdulillah, by the grace of Allah SWT which has bestowed His mercy and guidance, so the author is given fluency and ease in the preparation of the undergraduate thesis entitled **"ASSESSMENT OF INDUSTRIAL ZONES IN SPATIAL PLAN THROUGH THE MODELING OF INDUSTRIAL GROWTH IN SEMARANG METROPOLITAN COAST"**. The preparation of this undergraduate thesis is inseparable from the support of various parties who have helped directly or indirectly, therefore the author would like to express gratitude to :

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The author realizes that there are still shortcomings in the preparation of this undergraduate thesis. Therefore, the authors expect all forms of criticism and suggestions from readers in order to improving the undergraduate thesis in the future. The author also hopes that this undergraduate thesis could be beneficial for the development of knowledge in the field of Urban and Regional Planning.

Semarang, July 20, 2020

Writer

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