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**HASIL PENILAIAN SEJAWAT SEBIDANG ATAU *PEER REVIEW***  
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Judul Karya Ilmiah (Artikel) : The Mapping of Land Use Using Object-Based Image Analysis (OBIA) in Klaten Regency

Jumlah Penulis : 4 orang (**Nurhadi Bashit**, Novia Sari Ristianti, Yudi Eko Windarto and Desyta Ulfiana)

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Semarang, 18 Januari 2022

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Reviewer 1



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# Preface

The 5<sup>th</sup> International Conference on Energy, Environment, Epidemiology and Information System 2020 (5<sup>th</sup> ICEN IS 2020) has been organized by the School of Postgraduate Studies, Universitas Diponegoro, Indonesia with the support by World Class University (WCU) Program. The conference was held on August 12<sup>th</sup>-13<sup>th</sup> 2020 in Semarang, Indonesia by using Online Conference System. The aim of the conference was to distribute research outcomes on multidisciplinary research area on energy, environment, health and epidemiology and information system.

The 5<sup>th</sup> ICENIS 2020 have presented 10(ten) international honorable keynote speakers from representative institutions and continents: i) Prof. Elco van Burg, Vrije University Amsterdam, The Netherlands; ii) Prof Peter Gell, Federation University, Australia., iii) Prof. Jerry Miller, Western Carolina University, USA; iv) Prof. Shabbir Gheewalla, Joint Graduate School of Energy and Environment (JGSEE), Kingmookut University, Thailand; v) Assoc. Prof. Zainul Zakaria, Chemical Engineering Department, UTM Malaysia; (vi) Dr Yurdi Yasmi; Regional representative of IRRI for Southeast Asia, Cambodia; (vii) Dr Nuki Agya Utama, Executive Director of Asean Energy research; (viii) Patrick van Schijndel, TU Delft, The Netherlands, (ix) Barokah Sri Utami, Former President Director of PT Phapros, Indonesia, and (x) Dr Liew Kian heng from Strategics Singapore. Pursuing the international network of researchers and industrial applications, this event also has been attended by overseas colleagues to share their best research works as well as local academia and practitioners. Over 320 representatives from various institutions participated in this event, involving more than 340 abstracts submitted. After a rigorous selection process, the Scientific & Editorial Board of 5<sup>th</sup> ICENIS 2020 made selection of 300 articles to be published in E3S Web of Conferences, an open-access proceedings in environment, energy and earth sciences, managed by EDP Sciences, and indexed on Scopus, Scimago, Conference Proceedings Citation Index-Science (CPCI-S) of Clarivate Analytics's Web of Science, DOAJ (Directory of Open Access Journals). The Proceedings of 5<sup>th</sup> ICENIS 2020 consists of selected articles from Kazakhstan, Libya, Netherlands, Thailand, Malaysia. The published papers have passed all necessary improvement requirements in accordance to the Web of Conferences standard, reviewer's comments, SI, similarity tests by Turnitin program.

We would like to express our gratitude to the official committee, scientific & editorial boards, organizing partners. A very special thanks to Universitas Diponegoro for financially supporting this conference especially for financing indexing of proceeding in E3S. Finally, we would like to briefly acknowledge all presenters and attendees for their efforts sharing the beautiful ideas and useful research outcomes to inspire further research and collaborations. Although, this time the conference has been successfully conducted via webinar, but the number of participants showed a great increases and we do hope that this also will be the same for the coming 6<sup>th</sup> ICENIS 2021.

See you again in the next year conference 5<sup>th</sup> ICENIS 2021

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# The Mapping of Land Use Using Object-Based Image Analysis (OBIA) in Klaten Regency

Nurhadi Bashit<sup>1\*</sup>, Novia Sari Ristanti<sup>2</sup>, Yudi Eko Windarto<sup>3</sup>, and Desyta Ulfiana<sup>4</sup>

<sup>1</sup>Geodetic Engineering Department, Diponegoro University, [Indonesia](#)

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<sup>4</sup>Civil Engineering Department, Diponegoro University, Indonesia

**Abstract.** Klaten Regency is one of the regencies in Central Java Province that has an increasing population every year. This can cause an increase in built-up land for human activities. The built-up land needs to be monitored so that the construction is in accordance with the regional development plan so that it does not cause problems such as the occurrence of critical land. Therefore, it is necessary to monitor land use regularly. One method for monitoring land use is the remote sensing method. The remote sensing method is much more efficient in mapping land use because without having to survey the field. The remote sensing method utilizes satellite imagery data that can be processed for land use classification. This study uses the sentinel 2 satellite image data with the Object-Based Image Analysis (OBIA) algorithm to obtain land use classification. Sentinel 2 satellite imagery is a medium resolution image category with a spatial resolution of 10 meters. The land use classification can be used to see the distribution of built-up land in Klaten Regency without having to conduct a field survey. The results of the study obtained a segmentation scale parameter value of 60 and a merge scale parameter value of 85. The classification results obtained by 5 types of land use with OBIA. Agricultural land use dominates with an area of 50% of the total area.

**Keywords:** Land Use, Object-Based Image Analysis, and Remote Sensing

## 1 Introduction

Every year, population growth increases which cause changes in land use in an area. With strong further urbanization expected over the coming decades, they will cover increasing areas of the earth's surface and host the majority of the human population [1]. Land change is one of the key processes of global environmental change [2]. Land change causes increasingly limited availability of agricultural land and open land. The studies on the topic have gradually advanced from a focus on patterns of land-use and land-cover change to an

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\* Corresponding author: [nurhadi.bashit@live.undip.ac.id](mailto:nurhadi.bashit@live.undip.ac.id)

# Sustainable development goals as a tool for strategic planning in communities: a bibliometric analysis of research

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**Abstract.** Nowadays, the balanced development of any territorial unit should be based on the concept of sustainable development. As a result of its significant expansion, the goals of sustainable development began to be used at the level of strategic and operational documents, which in the context of decentralization is reflected at the level of individual territorial communities. This article is devoted to bibliometric analysis of the scientific papers from the Web of Science and Scopus, which deals with the topic of sustainable development in local communities as elements of strategic planning. To do this, we used the VOS viewer, Scopus, and Web of Science tools, which made it possible to identify major trends (for example, dynamics by year, country, authors, subject area, etc.) and clusters that visually present the obtained information. The following key parameters were also selected for the analysis: published for 1987-2019 years; the language of the paper – English; papers which contain keywords – sustainable development, local communities, and strategic planning. The results indicate a growing role of the chosen topic, which prevails in environmental and social sciences. The bibliometric analysis revealed 8 clusters (Scopus database) and 11 clusters (Vos database) with the central term “sustainable development”. The term “local communities” is also one of the key ones in the analyzed research, which is confirmed by the number and strength of links. The analyzed trends show that sustainable development is increasingly considered at the local level of territorial communities in the context of their planning and development.

## 1 Introduction

In modern realities the basic ideas of the concept of "sustainable development" are becoming an integral part of most government programs and strategies, which is reflected in all areas of the national economy. Traditionally, they take into account and keep a balance of the economic, environmental, and social components of the country's development through the achievement of the UN-proposed goals and indicators.

At the same time, there is a dynamic in the world, according to which most countries are moving to a model of decentralized management, which makes it possible to make more

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# The Discourses of the Sinking Villages in Demak: The Social Relation between Humans and Nature

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**Abstract.** Stories of climate change and its impacts on human life that have been reported in various media supports arguments that it is largely man-made. In many Indonesian communities, however, this disaster that alters cultural, social, and economic environment is often viewed as a natural phenomenon. This paper analyzes expressions of the experiences of local Indonesian inhabitants and media reporters using discourse analysis. The selected texts in the reports mostly focus on expressions concerning how the inhabitants dealt with the ever-increasing tidal flood that engulfed their dwellings and communities. The analysis reveal that stories on their experiences contain words and themes representing their views of natural phenomenon that created memories of the past and uncertain plans for the futures. Different types and class of words they express not only represent grieving for loss of livelihood, but also, more importantly, embody efforts to make the best of what is left, including changing the inundated district into a tourism site.

**Keywords:** narrative discourse; tidal flood, social relation; appraisal system

## 1 Introduction

One of the most important international stories in recent decades is climate change and its impacts on human life that has been productively narrated in various media. Most experts attributed this drastic environmental transformation to man-made global warming, creating images that shape cultural, social, and political and economic discourses [1].

The local communities, however, are not necessarily concerned nor aware of such agreements and efforts. They are focused on their local daily survival facing the unstoppable calamity, because they do not see any direct impact of international cooperation on their lives, due to the gap between narrative of the policies with various efforts and the ongoing disaster affecting their lives and livelihood [2].

Indonesia is one of the countries hit the hardest by climate change, producing discourses of regularly occurring disasters. However, for the severely affected local Indonesian

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# Evaluating the Impact of Technological Adoption Policy for Rural Coastal Communities

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**Abstract.** The solar power plant program is the policy issued by the Indonesian government to assist the rural community on electrical supply in remote islands. However, there is no study to evaluate the implementation of the program for rural coastal areas. In this paper, we examine the impact of new technology adoption for rural coastal communities. We focused on the economic effect of adopting solar power generation in Karimun Regency, Kepulauan Riau. The data were collected using a survey on 262 households in two villages. Using a before-after evaluation strategy, we analyse how the economic condition of the society before and after implementing the new equipment. We find that the implementation of a solar power plant has a positive impact on increasing the household's income. The results contribute to our understanding of how the effect of adopting the technological policy for rural coastal communities.

## 1 Introduction

As one of the widely archipelagic countries in the world, Indonesia has a thousand small islands a limited number of electrical demands. Many regions in Indonesia have not received properly yet electricity until today. Besides the problem of the archipelago's problems, the current crisis of fossil resources in Indonesia, which fuels electricity generation, is a reason for Indonesia to create new alternatives energy to meet the needs of the community. Solar power generation can be an alternative to address these two obstacles [1]. This is supported by the geographical situation of Indonesia which is a tropical region so that it will get more sun exposure

The Indonesian government, through the Ministry of Energy and Mineral Resources and the Ministry of Marine and Fisheries, provides solar power plants to help the people in small islands in remote areas in fulfilling an electrical need. The programme is set up through GIZ's (*Deutsche Gesellschaft für Internationale Zusammenarbeit*) aid [2]. Generally, this aid aims

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