

DIGITALES ARCHIV

ZBW – Leibniz-Informationszentrum Wirtschaft
ZBW – Leibniz Information Centre for Economics

Adiyanta, F. C. Susila

Article

Urban space governance and sustainable green development in Indonesia

Provided in Cooperation with:

International Journal of Energy Economics and Policy (IJEPP)

Reference: Adiyanta, F. C. Susila (2020). Urban space governance and sustainable green development in Indonesia. In: International Journal of Energy Economics and Policy 10 (1), S. 1 - 6.

<https://www.econjournals.com/index.php/ijeep/article/download/8065/4736>.

doi:10.32479/ijeep.8065.

This Version is available at:

<http://hdl.handle.net/11159/8197>

Kontakt/Contact

ZBW – Leibniz-Informationszentrum Wirtschaft/Leibniz Information Centre for Economics

Düsternbrooker Weg 120

24105 Kiel (Germany)

E-Mail: [rights\[at\]zbw.eu](mailto:rights[at]zbw.eu)

<https://www.zbw.eu/econis-archiv/>

Standard-Nutzungsbedingungen:

Dieses Dokument darf zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden. Sie dürfen dieses Dokument nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, aufführen, vertreiben oder anderweitig nutzen. Sofern für das Dokument eine Open-Content-Lizenz verwendet wurde, so gelten abweichend von diesen Nutzungsbedingungen die in der Lizenz gewährten Nutzungsrechte.

<https://zbw.eu/econis-archiv/termsfuse>

Terms of use:

This document may be saved and copied for your personal and scholarly purposes. You are not to copy it for public or commercial purposes, to exhibit the document in public, to perform, distribute or otherwise use the document in public. If the document is made available under a Creative Commons Licence you may exercise further usage rights as specified in the licence.



Urban Space Governance and Sustainable Green Development in Indonesia

F. C. Susila Adiyanta*

Faculty of Law, Universitas Diponegoro, Jl. Prof. Soedarto, Tembalang, Kota Semarang, Jawa Tengah 50275, Indonesia.

*Email: susilaadiyanta.fhundip@yahoo.com

Received: 22 April 2019

Accepted: 10 September 2019

DOI: <https://doi.org/10.32479/ijeep.8065>

ABSTRACT

The development of urban areas and settlements by the government and the private sector has an impact on the environment, for that they need to develop a city planning plan based on the concept of environmentally friendly sustainable development. The main issues of this study are the background, parameters, and urgency of urban planning development based on the concept of sustainable development that is environmentally friendly. This study uses a sociolegal approach, and aims to describe, and explain various factors that are taken into consideration for the establishment of a city planning plan policy based on the concept of environmentally friendly sustainable development. The results of the study: (a) Geographical, topographic conditions, social, economic and environmental issues are the basis for consideration of urban planning development based on the concept of environmentally friendly sustainable development; (b) the principles of democracy, justice and sustainability are parameters of urban planning development based on the concept of environmentally friendly sustainable development; and (c) the urgency of urban planning based on the concept of environmentally friendly sustainable development is the realization of public welfare. The recommendations of this study are: (a) Planning of development activities and development of residential areas must fulfill licensing requirements, analyze environmental impacts and aspirations of the community; (b) there is a need to strengthen the capacity of supervisory institutions that involve the public in all activities for implementing development policies and developing residential areas.

Keywords: Regulation, Urban Space Governance, Sustainable Environment-based Development

JEL Classifications: O18, Q01

1. INTRODUCTION

The rapid development in urban areas has changed the landscape and natural conditions and landscapes which in turn are always related to environmental damage. Various development activities, the provision of facilities for the interests of settlements and industry often overlook the impact on the social and natural environment (Van and Bao, 2018). In the Southeast Asia region, forest fires that smoke cover air space, almost most of Sumatra and Kalimantan, even crossing to neighboring countries (Malaysia and Singapore), among others, are caused by the conversion of forests to industrial land. Floods and landslides also often hit cities and rural areas in Indonesia. Land conversion, exploitation of

space and natural resources are increasingly widespread, causing potential vulnerability to natural disasters such as landslides and floods, as well as other disaster potentials, which sometimes cannot be accurately predicted. Forest fire disasters in the dry season, floods and landslides in the rainy season, become routine government activities throughout the year and seasons without a meaningful solution to cut off the source of the disaster and its links. On the other hand, spatial plans, policies, and regulations, allotted land that has been prepared cannot run well. For this reason, the government and all communities need to anticipate the possible impacts, through planning, management, and the concept of disaster risk mitigation that may arise together to avoid the risk of damage, loss, and suffering for the community (Surono, 2014).

Departing from the research background as mentioned above, then using the socio-legal approach (sociological research), namely: reviewing policy objectives, validity of legal rules, legal concepts, legal norms, and values of justice regulation settlement development policies based on the concept of environmentally sustainable development in a contextual manner (Sidharta, 2009; Irianto, 2009), this research aims to analyze of sustainable urban-based space management in Indonesia. This aims to describe and explain various factors that form the basis of consideration for urban space governance regulations based on the concept of environmentally friendly sustainable development, the urgency of regulation and implementation of governance policies urban space based on the concept of sustainable development that is environmentally friendly (Prabowo, 2014). Some research (e.g., Hong and Yen, 2019; Fullerton et al., 2015) has particularly highlighted the relationship between urban sustainable development and the increase of renewable energy consumption. Register (1997) explore the development of ecocities, analyzing the balance of urban development with environmentally friendly direction of city buildings. Wheeler (2013) emphasizes the importance of sustainability planning to create an ecologically viable urban atmosphere. Sukarno et al. (2015) specifically also analyzed patterns of energy consumption in a city in Indonesia. Increasing urban living standards and expanding housing for the middle class will ultimately increase consumption of electrical energy (Sukarno et al., 2017).

2. URBAN GOVERNANCE AND CONCEPTS FOR SUSTAINABLE ENVIRONMENTAL DEVELOPMENT CONCEPTS

In city governance, what is meant by the basic concept of the concept of sustainable development that is environmentally friendly is an environmentally sound city. In other words, it is a city development concept that combines 3 (three) pillars namely ESD (ecology, economics, and social culture). The basic concept of sustainable development that is environmentally friendly is a city that is built on the principles of urban community life based on environmental carrying capacity (Register, 1997). The main objective of many ecological cities with the basic concept of the concept of sustainable development that is environmentally friendly is to eliminate all carbon waste, produce energy fully through renewable sources, and to preserve the environment for the carrying capacity of healthy city ecosystems. Ecological cities also have the intention of encouraging economic growth, reducing poverty, organizing cities with higher population densities, with the principle of higher economic, social, economic efficiency, and improving health (Register, 1997).

Ecologically cities can also be interpreted as healthy cities, meaning that there is a balance between development and development of cities with sustainable environmental sustainability. Basically, cities can also be seen as an ecosystem. The concept of an ecological city or a green city can indeed be the right solution for cities in Indonesia, because it can potentially control ecological systems (temperature, erosion, and flooding), social harmony systems for residents, homes, schools, homes

sick, etc.), as well as the economic system (employment) ([/www.greencitarum.org/rural-eco-settlement](http://www.greencitarum.org/rural-eco-settlement)). The city is a microcosm of environmental problems that continue to develop as if without borders, following the rhythm and dynamics of its ever-increasing population growth. Humans interact with natural systems, but with behavior that tends to be destructive, often it does not protect, even damage the environment. On the other hand, due to the limited absorption and power of environmental assimilation, the urban environment becomes increasingly ecological scarcity due to various human activities (Hady, 2005). City infrastructure development in Indonesia, which still uses the exploitation paradigm by increasing production alone and still concentrating on economic interests, has led to increasingly uncontrolled urban space development. In the United States, especially in New York City, to overcome the expansion and development of increasingly densely populated urban areas regulatory reforms governed urban space for tenements and zoning codes (in year) in 1916 which included limiting mass development activities, and use of urban land use. In these conditions, mass transportation is seen as a force that will reduce density and promote public transportation facilities and to develop other regions and places as supporting cities/hinterland (Theobald, 2005; Norcliffe et al., 1996). This has become a trigger factor for the emergence of environmental problems, both biotic and abiotic environments. If urban development becomes out of control, this condition is increasingly becoming a burden on the carrying capacity of the urban environment and widens the gap between the city and the hinterland area (Lubis, 2011). Equally, the growth in demand for energy as well as the effect of urban growth on environmental aspects is also related to the increase in socioeconomic status of its inhabitants (Pérez et al., 2019).

3. SPACE GOVERNANCE REGULATIONS IN SOME METROPOLITANS IN CENTRAL JAVA

Semarang as the Capital of Central Java Province, is located in the South of the North Coast of Java. Physically, the area of Semarang City consists of coastal areas, lowlands and hills. Functionally, it is divided into upper regions which are more appropriate to function as water catchment areas, and the lower area which is more precisely functioned as an area that can eliminate sea water intrusion. The data obtained from the Semarang City Planning and Settlement Service reveals that some Semarang City areas have a tendency to prone to landslides, so that development planning and housing development must pay attention to geographical and land conditions not to further aggravate existing land use and function damage (Arthamesia et al., 2016).

Similar to Semarang, which has an area bordering the North Coast of the Java Sea, Rembang Regency is located at the northeastern tip of Central Java Province and is passed by the North Java Coast Road (Pantura Line). In general, the soil conditions are low level. The southern part of the Rembang Regency is a hilly area, part of the North Cretaceous Mountains, with a peak of Mount Butak (679 m). Part of the northern region, there are hills with a peak of Mount Lasem (altitude of 806 m). The area is now protected in the

Celering Mountain Nature Reserve. Unlike the previous two cities, Surakarta City or better known as Solo, is located in the lowlands at an altitude of 105 m above sea level and in the city center 95 m above sea level, with an area of 44.1 km² (0.14% of Central Java). The location of Surakarta is around 65 km northeast of Yogyakarta, 100 km southeast of Semarang and 260 km southwest of Surabaya and surrounded by Mount Merbabu (high 3145 m) and Merapi (height 2930 m) in the west, and Mount Lawu (height 3265 m) in the eastern part. A little further south lies the Sewu Mountains. The land around this city is fertile, because it is surrounded by Bengawan Solo, the longest river in Java, and is passed by Kali Anyar, Kali Pepe, and Kali Jenes. Such topographical and geographical conditions make the city of Solo inseparable from the threat of flooding in Solo and other rivers (Surakarta City Government, 2015).

Starting from the geographical, topographic, environmental, social, economic, political and cultural conditions and character of the local community, as mentioned above, the municipalities of Semarang, Solo and Rembang are required to be able to design urban planning policies and develop residential areas that remain consistent in maintaining and maintaining environmental sustainability, a balance between human and natural resources, and synergizing with other districts/cities as a buffer (hinterland) optimally for the realization of community welfare. The results of a comparative study of development policies and development of urban residential areas based on the concept of environmentally friendly sustainable development in three cities: Semarang, Solo, and Rembang based on differences and similarities in spatial, topographic, geographical, and strategic developments in the social, economic and environmental fields. This shows that with this background of regional, economic, social and cultural spatial conditions, each district government organizer and/or city - Semarang, Solo, and Rembang which are the objects of this research - are required to be able to establish environment-based sustainable settlement development policies.

4. IMPLEMENTATION OF URBAN SPACE MANAGEMENT POLICIES AND THE SUSTAINABLE DEVELOPMENT IN CENTRAL JAVA'S CITIES

As cities in Indonesia, the two regions, the City of Semarang, and Rembang - with the exception of the city of Solo which only consists of plains and mountains - are the coastal areas of Java Island which have a variety of landscape characters that include mountains, coastal areas and islands. The diversity of landscapes produces patterns of interaction that differ between humans and nature. The diversity of patterns of interaction gives birth to various forms of social, cultural, economic and political interactions that vary with other buffer regions. Based on the condition of the region with such geographical and topographical conditions, there are several aspects that must be taken into consideration by the regional government to carry out development and regional expansion, which include: First, the security aspect of the disaster, which is the mandate stipulated in Article 6 and 28 of Law No. 26 of 2007 concerning Spatial

Planning and in Article 35 and Article 51 government regulation No. 15 of 2010 concerning the Implementation of Spatial Planning (BNPB, 2010).

Second, aspects of comfort in city space. Comfort demands in several community groups arise in housing components, recreation components, and culture. Fulfillment of this aspect can be done by structuring the coastal area of the city, accommodating the provision of green open space, as well as the allocation of service activities in the coastal area. Third, the productivity aspects of coastal cities are filled with opportunities for employment for the community. Fourth, aspects of environmental quality. In order to ensure the sustainability of coastal cities, it is necessary to build a community awareness and responsibility in managing the environment. This process can be carried out by providing infrastructure and facilities as instruments for controlling development, to enforcing sanctions for any spatial violations that threaten environmental sustainability.

In planning urban development and settlements, there are several approaches that must be taken by the government, namely: Structural and non-structural approaches. The structural approach includes the construction of sea wave detention infrastructure and facilities, water treatment, reservoirs/dams and so on. While non-structural efforts include spatial planning through coastal zoning arrangements, allocation of activities based on the level of disaster risk, coastal forestry with mangroves, forest water catchment forestation, and the formation of environmentally friendly and adaptive community behaviors to climate change. This requirement requires urban spatial planning that follows the dynamics of population growth, economics, and social like cities that are targeted by urbanization in the surrounding area.

In its development, based on urban typology, every urban development policy and development of urban residential areas will face different issues, problems, and needs according to the spatial specifications (Brotodewo, 2010; Indra, 2015). In a plan for urban space governance, land development is loosely regulated through zoning codes in the inner area of urban areas and the development of most areas so as to be able to pursue speculative activities and can relatively accept various variants for more customary or intensive than permitted according to legal rules that apply to an area or region that is the jurisdiction of each local government (King, 2011). Based on the conditions of cities in Indonesia, there are several variables needed to create a safe, comfortable, productive and sustainable space. For development planning and development of residential areas based on the concept of sustainable development that are environmentally friendly, a development approach that is sensitive to the diversity of characteristics of various cities is needed (Table 1).

Considerations for regional development planning as mentioned above also apply and become a consideration factor for the development policies of cities and residential areas by the Surakarta City Government. As a city that does not have a coastal topography, the existence of Solo Bengawan is a potential for the disaster of flood waters which will inundate some of its territory. The Solo City Government also needs synergy with

Figure 1: Synergy of social, economic and environmental factors in urban development policy

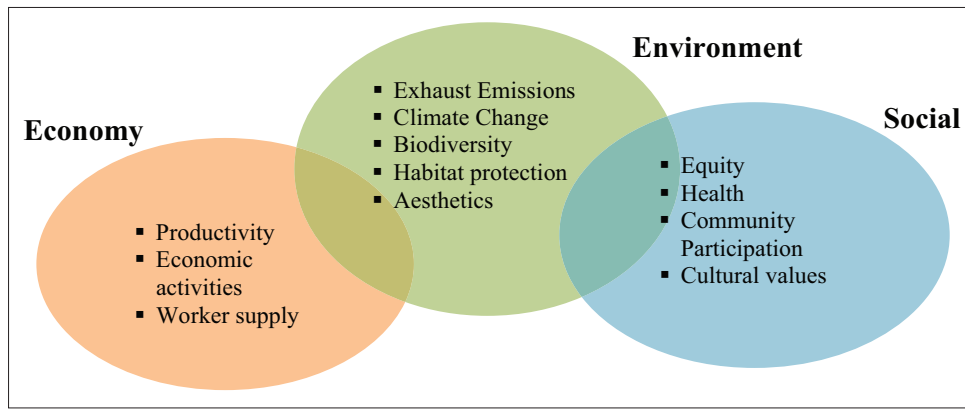


Table 1: Function and application of green city in some typologies of urban areas

Typology of urban areas	Characteristics of green open space	
	The main function	Application of needs for green open space
Beach	Securing coastal areas Disaster mitigation	Based on area Based on certain functions
The mountains	Soil conservation Water conservation Biodiversity	Based on area
Disaster-prone	Disaster mitigation/ evacuation	Based on certain functions
Sparsely populated	Basic planning area Social	Based on certain functions Based on population
Densely populated	Ecological Social hydrological	Based on certain functions Based on population

Source: Guidelines for Provision and Use of Green Open Space in Urban Areas
Based on Minister of Public Works Regulation of 2008 No: 05/PRT/M/2008 dated May 26, 2008

other buffer zones, so that the burden of population is not fully concentrated in just one government area (Figure 1).

5. DECENTRALIZATION BASED AUTHORITY IN ENVIRONMENTAL MONITORING AND MANAGEMENT

To realize urban space governance in accordance with urban spatial regulations and policies at the government level in provinces, districts and cities that are nationally integrated, the authority to supervise and enforce law on violations that affect the environment is the responsibility of the minister and implementation can be delegated based on the authority of attribution, delegation and mandate as stipulated in Article 22 of the Republic of Indonesia Law Number 32 of 2009 concerning Environmental Protection and Management which states that the Minister carries out supervision of the business guarantor and/or activity on the provisions stipulated in legislation in the field of the environment.

Formulation of Article 22 of the Law of the Republic of Indonesia Number 32 of 2009 concerning Protection and Management of the Environment as mentioned above, has the understanding that the Law gives attribution authority to the Minister of Environment

to conduct supervision, but sectorally, especially in relation to licensing for do business and/or activity, the minister who has the authority to do so has the authority to supervise and grant permits. Regarding the delegation of supervisory authority to provincial, regency and municipal governments, Article 22 paragraph (3) of the Republic of Indonesia Law Number 32 year 2009 concerning Environmental Protection and Management states that in the event that oversight authority is submitted to the Regional Government, the Regional Head shall determine the official authorized to supervise. Furthermore, in the Explanatory section, it is stated that in the framework of implementing environmental management, the Government may hand over part of its affairs to the Regional Government to be its household affairs. Thus, the actual authority possessed by the regency/city government is the submission of affairs based on the principle of decentralization.

6. ECO CITY SUSTAINABLE DEVELOPMENT: A BALANCE BETWEEN CITY PHYSICAL DEVELOPMENT, QUALITY OF LIFE, AND SUSTAINABLE ENVIRONMENTAL CONSERVATION

In a development plan policy using urban planning concepts based on the concept of sustainable city development (eco city sustainable development), basically is a concept that has developed and is widely used to solve a problem as a whole, which concerns the environmental, economic and social aspects (Register, 1997; Ozturk, 2010). These aspects are the integration of various human activities, thus requiring coordination between sectors and regions (Ford et al., 2018; Johansson and Karlsson, 2000).

The concept of sustainability has developed into various issues of comprehensive regional development and urban spatial planning. This comprehensive nature must be the priority of city development policy makers and planning for urban settlement development, so that every decision made must pay attention to all aspects of the risks and impacts that have been previously considered before a policy is realized (Djafar, 2014). The urgency of urban development and the development of residential areas based on the concept of environmentally friendly sustainable development rests on the idea of the concept of sustainable

development which was first coined by the World Commission on Environment and Development (WCED) (World Commission for Environment and Development). In the declaration, what is meant by sustainable development is as a development approach to meet the needs of the present generation without reducing the ability of future generations to meet their own needs (Siahaan, 2005). In its session held in Tokyo in 1987, the WCED has produced the formula and basic principles of sustainable development known as the Tokyo declaration. There are three main principles of sustainable development which are instruments for realizing urban planning and urban residential areas that can guarantee the welfare of the entire community (Siahaan, 2005).

The principles of sustainable development can briefly mention a number of principles. First, the principle of democracy. This principle guarantees that development is carried out as a manifestation of the common will of all the people for the mutual benefit of all the people. In this democratic principle there are several important aspects, namely that the main agenda of development is the people's agenda in the interests of the people, community participation in formulating and implementing development is a moral and political imperative, the need for honest and open information about the development agenda and public accountability on the agenda development, the process of policy formulation and development implementation (Banister, 2012). Second, the principle of justice. This principle basically guarantees that all people and community groups have equal opportunities to participate in the development process and productive activities, and participate in enjoying the results of development. Third, the principle of sustainability. This principle requires public policy makers to design development agendas in the long-term visionary dimension, to see the impact of development both positively and negatively in all aspects, not only in the short term dimension (Kerap, 2002). In the end, the realization of urban space governance policies based on eco city sustainable development is only possible if these three basic principles are operationalized as a development politics (Saraswati, 2017). As the main requirement is the existence of good will to choose alternative alternatives that are more resource-efficient and able to synchronize conservation aspects with aspects of the utilization of natural resources wisely, for the purpose of sustainable community welfare and better governance of future life.

7. CONCLUSION

Geographical, topographical, and social, economic and environmental issues are factors that form the basis for consideration and background in urban planning and development of residential areas in districts and or cities. Parameters of urban planning development and residential area development based on the concept of environmentally friendly sustainable development based on principles, democracy, justice, and sustainability. The urgency of development policies and development of urban areas and settlements based on the concept of environmentally friendly sustainable development is based on the fact that the development and development of residential areas affect and bring impacts on the environment and surrounding environment, so that it needs to balance optimally maintain the functions of

space, land, and environment for a prosperous society. In every planning of development activities and development of residential areas, in addition to having to fulfill the licensing requirements and analysis of environmental impacts, also must consider and consider the aspirations and interests of the public. There is a need to strengthen the capacity of oversight institutions, both internally and independently, which involve the public in all activities for implementing development policies and developing residential areas.

REFERENCES

- Arthamesia, D., Silviana, A., Adiyanta, F.S. (2016), Alih fungsi tanah resapan air menjadi kawasan pemukiman dari prespektif tata guna tanah (studi kasus di kecamatan mijen kota Semarang). *Diponegoro Law Journal*, 5(3), 1-16.
Available from: <http://www.greencitarum.org/rural-eco-settlement>.
- Banister, D. (2012), Assessing the reality—transport and land use planning to achieve sustainability. *Journal of Transport and Land Use*, 5(3), 1-14.
- BNPB. (2010), Data Kebencanaan BNPB Tahun 2010. Jakarta: BNPB.
- Brotodewo, N. (2010), Penilaian indikator transportasi berkelanjutan pada kawasan metropolitan di Indonesia. *Journal of Regional and City Planning*, 21(3), 165-182.
- Djafar, E.M. (2014), Sinergi pelaksanaan penegakan hukum lingkungan Indonesia. *Jurnal Hukum dan Peradilan*, 3(3), 237-242.
- Ford, A., Dawson, R., Blythe, P., Barr, S. (2018), Land-use transport models for climate change mitigation and adaptation planning. *Journal of Transport and Land Use*, 11(1), 83-101.
- Fullerton, T.M., Novela, G., Torres, D., Walke, A.G. (2015), Metropolitan econometric electric utility forecast accuracy. *International Journal of Energy Economics and Policy*, 5(3), 738-745.
- Hady, H. (2005), Strategi pembangunan kota-kota dalam mewujudkan kesatuan ekonomi nasional. *Prisma*, 1, 20-30.
- Hong, C.Y., Yen, Y.S. (2019), A way from renewable energy sources to urban sustainable development: Empirical evidences from Taichung city. *International Journal of Energy Economics and Policy*, 9(2), 83-88.
- Indra, P.R.A. (2015), Kebijakan transportasi berkelanjutan: Suatu penerapan metodologi yang komprehensif. *Bulletin Tata Ruang*, 2011, 20-30.
- Irianto, S., editor. (2009), *Metode Penelitian Hukum: Konstelasi dan Refleksi*. Indonesia: Yayasan Pustaka Obor Indonesia.
- Johansson, T.B., Karlsson, G.V. (2000), Mitigation climate change impacts though sustainable development solutions. In: Gomez-Echeverri, L., editor. *Climate Change Development*. New Haven: Yale School of Forestry and Environmental Study.
- Kerap, A.S. (2002), *Etika Lingkungan*. Jakarta: Penerbit Buku Kompas.
- King, D. (2011), Developing densely. *The Journal of Transport and Land Use*, 4(2), 19-32.
- Lubis, J. (2011), Mewujudkan pembangunan kota pesisir di Indonesia yang berkelanjutan melalui penyediaan infrastruktur berbasis penataan ruang. *Bulletin Tata Ruang*, 2011, 10-20.
- Norcliffe, G., Bassett, K., Hoare, T. (1996), The emergence of postmodernism on the urban waterfront: Geographical perspectives on changing relationships. *Journal of Transport Geography*, 4(2), 123-134.
- Ozturk, I. (2010), A literature survey on energy-growth nexus. *Energy Policy*, 38(1), 340-349.
- Pérez, J.J., Bernal, E., Giraldo, J.S. (2019), Methodology to evaluate the residential electrical stock appliances according to socioeconomic status. *International Journal of Energy Economics and Policy*, 9(3), 114-120.
- Prabowo, L. (2014), *Green constitution Indonesia (diskursus paradigmatis pembangunan berkelanjutan)*. *Jurnal Hukum dan Peradilan*, 3(2), 127-136.

- Register, R. (1997), *Ecocities: Rebuilding Cities in Balance with Nature*. Canada: New Society Publishers.
- Saraswati, R. (2017), The function of ideal law in preparation regulation legislation in order to creating equitable regional development. *Diponegoro Law Review*, 2(1), 114-122.
- Siahaan, E.I. (2005), *Filosofi Perencanaan Pembangunan Kota Sesuai Paradigma Baru Indonesia: Hakikat Ilmu Untuk Pemberdayaan dan Peningkatan Peranserta Masyarakat*. Available from: http://www.rudyc.com/PPS702-ipb/04212/eddy_siahaan.htm.
- Sidharta, B.A. (2009), *Penelitian Hukum Normatif: Analisis Penelitian Filosofikal dan Dogmatikal*. Dalam *Metode Penelitian Hukum Konstelasi dan Refleksi*. Indonesia, Jakarta: Yayasan Obor.
- Sukarno, I., Matsumoto, H., Susanti, L. (2017), Household lifestyle effect on residential electrical energy consumption in Indonesia: On-site measurement methods. *Urban Climate*, 20, 20-32.
- Sukarno, I., Matsumoto, H., Susanti, L., Kimura, R. (2015), Urban energy consumption in a city of Indonesia: General overview. *International Journal of Energy Economics and Policy*, 5(1), 360-373.
- Surakarta City Government. (2015), *Buku Pedoman Rencana Tata Ruang dan Wilayah Kota Surakarta*. Surakarta: Surakarta City Government.
- Surono, S. (2014), *Siapakah yang tinggal di wilayah yang memiliki risiko Bencana*. Tata Ruang, 2014, 1-10.
- Theobald, D.M., Spies, T., Kline, J., Maxwell, B., Hobbs, N.T., Dale, V.H. (2005), Ecological support for rural land-use planning. *Ecological Applications*, 15(6), 1906-1914.
- Van, D.T.B., Bao, H.H.G. (2018), The role of globalization on CO₂ emission in Vietnam incorporating industrialization, urbanization, GDP per capita and energy use. *International Journal of Energy Economics and Policy*, 8(6), 275-283.
- Wheeler, S.M. (2013), *Planning for Sustainability: Creating Livable, Equitable and Ecological Communities*. New York: Routledge.