

Environmental Services on the Public Green Open Space using Dpsir Approach: Study Case at Mataram City

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ABSTRAK

Keberadaan RTH publik memberikan sejumlah manfaat bagi masyarakat maupun lingkungan sekitarnya. Penelitian ini bertujuan untuk menilai fungsi jasa lingkungan RTH publik di Kota Mataram dengan menggunakan beberapa pendekatan analisis lingkungan. Metode penelitian menggunakan pendekatan deskriptif kuantitatif dengan sampel penelitian adalah RTH Pagutan dan RTH Udayana. Waktu penelitian dilakukan pada bulan Juni hingga Juli 2023 dengan instrumen penelitian yaitu wawancara, dan observasi. Beberapa metode yang digunakan yaitu analisis spasial, analisis jasa ekosistem, dan analisis DPSIR. Berdasarkan pendekatan DPSIR, fungsi jasa pada RTH publik dipicu (*Drivers*) oleh adanya beberapa peraturan yang mengharuskan wilayah perkotaan memiliki 30% dari luas wilayahnya digunakan sebagai RTH. Tekanan (*Pressure*) yang dihadapi oleh RTH antara lain adalah peningkatan jumlah kendaraan dan jumlah penduduk setiap tahunnya. Kondisi eksisting (*States*) menunjukkan perbedaan nilai dari pengukuran parameter kebisingan, temperature dan kualitas udara di RTH Udayana dan RTH Pagutan. Dampak (*impact*) yang dirasakan dengan keberadaan RTH menunjukkan bahwa beberapa parameter lingkungan untuk kebisingan berkisar 12,42-20,08 dB, temperature berkisar 0,83-1,07°C dan kualitas udara (TSP, PM₁₀, SO₂, CO, O₃, Kelembaban) menunjukkan adanya perbedaan antara RTH dan non-RTH. Tanggapan (*Response*) terhadap (*drivers*), (*pressure*), (*states*), dan (*impact*) yang telah dirumuskan dengan menggunakan analisis SWOT yaitu melakukan koordinasi dan kerjasama semua pihak baik pemerintah, swasta, dan masyarakat yang terkait dengan perencanaan, penataan dan pemanfaatan RTH Publik, serta monitoring secara berkala untuk memastikan keberlanjutan jasa lingkungan yang dihasilkan oleh RTH Publik.

Kata kunci: RTH, Jasa Lingkungan, Analisis DPSIR, Analisis SWOT, Kota Mataram

ABSTRACT

The existence of public green open spaces provides a number of benefits for the community and the surrounding environment. This study aims to assess the environmental service function of public green spaces in Mataram City using several environmental analysis approaches. The research method used a quantitative descriptive approach with the research sample being Pagutan green space and Udayana green space. The research time was conducted from June to July 2023 with research instruments namely interviews, and observations. Some of the methods used are spatial analysis, ecosystem service analysis, and DPSIR analysis. Based on the DPSIR approach, the service function in public green spaces is triggered (*Drivers*) by the existence of several regulations that require urban areas to have 30% of their area used as green spaces. Pressures faced by public green spaces include an increase in the number of vehicles and population every year. Existing conditions (*States*) show differences in the value of the measurement of noise, temperature and air quality parameters in RTH Udayana and RTH Pagutan. The impact felt by the presence of RTH shows that some environmental parameters for noise range from 12.42-20.08 dB, temperature ranges from 0.83-1.07°C and air quality (TSP, PM₁₀, SO₂, CO, O₃, Humidity) show a difference between RTH and non-RTH. Response to (*drivers*), (*pressure*), (*states*), and (*impact*) variables that have been formulated using SWOT analysis is to coordinate and cooperate all parties both government, private, and community related to planning, structuring and utilization of public green spaces, as well as regular monitoring to ensure the sustainability of environmental services produced by public green spaces.

Keywords: RTH, Environmental Services, DPSIR Analysis, SWOT Analysis, Mataram City

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1. INTRODUCTION

Public Open Space (POS) is an open area located in urban areas. Based on Permen ATRKBPB no 14 of

2022 concerning the provision and utilization of Public Open Space, Public Open Space is an area whose use is more open in nature containing plants

that are planted naturally or artificially by considering 4 main factors namely ecological, economic, socio-cultural and aesthetic. The existence and availability of green open space in urban areas has been regulated in Law No. 26 of 2007 concerning Spatial Planning that green open space is at least 30% of the urban area with a division of 20% public green open space and 10% private green open space. The existence and availability of green open space are becoming increasingly difficult to realize along with the development of urban areas.

The development that occurs in urban areas has an impact on the reduction of open areas that become built-up land. As is the case in the cities of Bandung and Yogyakarta, which is caused by population growth, economic encouragement and private investment that buys productive lands so that there is inconsistency with the local government in maintaining the design of the area that has been determined in the Regional Spatial Plan (RTRW) and this phenomenon is a factor in reducing the existence and availability of green spaces in urban areas (Prihatin, 2015).

The existence and availability of green spaces in urban areas is a place for environmental services provided, especially in the ecological aspect. Environmental services provided or the benefits of the existence of green spaces as filters and absorbers of pollutants, noise absorbers, windbreakers, erosion preventers, modification of solar radiation, water absorbers, and climate regulators in urban areas. The existence of RTH is increasingly difficult to maintain due to conflicts of interest and the lack of understanding of the community and managers in assessing the existence of RTH (Saroh & Krisdianto, 2020).

The existence of decreasing green spaces in urban areas has an impact that can be felt directly by people living in urban areas. The larger the area owned by urban areas, the more it requires the existence of green spaces. The city of Jakarta is only able to provide 14.4% of the total 30% RTH set so that air pollution cannot be fully absorbed by vegetation (Harahap, 2021).

The existence of green spaces, especially public green spaces, can have a significant ecological impact on health, both in physical health and psychological health. Based on research conducted by (Jennings & Gaither, 2015) there is a health gap felt by the community due to the lack of green spaces as an environmental control. Population growth and the increase in the number of vehicles that occur every year affect the health gap felt by the community locally and up to the global level.

Public green spaces play an important role in the sustainability of urban ecosystems by providing various ecosystem services, especially in ecological aspects. Based on research conducted by (Song et al., 2020) which tries to analyze the carbon sequestration of the number of trees in the louhe mainland China by measuring the improvement of air quality, rainfall

interception, carbon storage, and absorption using the i-Tree eco model shows that there are 1,006,251 trees which in 2013 can store 54,329 tons of carbon reserves, absorb about 4,973 tons of gross carbon, remove 92 tons of air pollutants, and avoid 122,637 m³ runoff which in the future can help the government in planning and drafting policies in optimizing the structure and composition of green spaces in maximizing ecosystem services.

Public green open spaces in Mataram City have been in the spotlight and attracted the interest of researchers to raise issues related to green open spaces in the city of Mataram. Based on research conducted by (Latifah et al., 2020) who tried to evaluate the risk of trees using tree risk assessment with reference to the ISA standard which resulted in recommendations for pruning. Another study conducted by (Ahmad et al., 2023) which tried to calculate the estimation of carbon stocks in open space areas which showed the results of total stored carbon of 4238,31 tons/year with total stored biomass of 9017,66 tons/year. The limited research that raises the issue of green open space and the impact of the existence of public green open space in Mataram City provides opportunities and opportunities to conduct further and specific research related to the issue of public green open space in Mataram City.

Monitoring of ecosystem services can provide important assistance in incorporating the multifunctionality of urban ecosystems in planning and management processes. Based on research conducted by (Kiss et al., 2015) using tree stand calculations for carbon sequestration and air pollution removal in Hungarian cities, it was found that there are groups of trees that can sequester emissions significantly (considering conditions and species). The appropriate management pattern of green spaces in urban areas is not to cut down trees which results in a reduction in the quality of ecosystem services that can be provided by green spaces to reduce pollution and emotions in urban areas. Based on research conducted by (Sutapa et al., 2021) which uses an ecohydrology approach to identify water catchment areas in watershed areas so as to improve the quality and quantity of water and minimize environmental degradation due to erosion. Another study conducted by (Sutapa et al., 2023) evaluated the existence of green spaces with parameters of water infiltration ability, water storage capacity, air temperature, humidity, and potential economic utilization using ecohydrology principles to understand, assess, and identify possible efforts to improve the quality of green spaces. Various approaches are taken in the search for alternative solutions that are effective and efficient in improving the quality and quantity of green spaces.

Environmental approaches that can be used in an effort to find out and identify the causes and consequences of the existence of green spaces in urban areas is the DPSIR approach. The DPSIR

approach is an approach framework that is widely used to analyze environmental problems resulting from human activities. The DPSIR approach is used to explore the causes and consequences of human activities on the environment that are not managed properly (Kurniawan et al., 2017).

Based on the descriptions above, it is important to conduct research on evaluating the service function of Public RTH in Mataram City using a multi-environmental analysis approach. This research aims to evaluate the service function of public green spaces in Mataram City using a multi-environmental analysis approach which includes the DPSIR approach, Spatial Approach, Desk Study, Delta T Analysis, and SWOT Analysis.

2. RESEARCH METHODS

This research was conducted in Mataram City from June to July 2023 using research samples, namely RTH Udayana and RTH Pagutan. The selection of this sample is based on the consideration that it is the largest RTH and represents the characteristics of RTH in Mataram City. The research is descriptive and quantitative used the DPSIR approach framework. The DPSIR approach is an approach to map information related to environmental conditions as a whole (Hendriarianti et al., 2022). The research flow

chart as well as variables, supporting data and analysis methods can be seen in Table 1.

The variables were measured and analyzed using several approaches including desk study, spatial analysis with the help of satellite imagery, laboratory testing with parameters tested including TSP, PM₁₀, CO, SO₂, O₃, and Humidity, Temperature, and Noise. Measurement and testing on the parameters of TSP, PM₁₀, CO, SO₂, O₃, and Humidity, Temperature, and Noise were carried out using Trusur AQMS (Air Quality Monitoring System) Portable type with monitoring at 13.00 with testing inside the RTH area and outside the RTH area while for noise testing is carried out with a measurement period divided into 6 periods namely morning (07.00), midday (10.00), late afternoon (15.00), evening (18.00) and night (23.00) based on noise measurement standards in government regulations KEP-48 / MENLH / 11/1996 concerning noise level quality standards. Delta T analysis is the temperature difference between two measurement points which includes the difference between the temperature inside the area and outside the RTH area and SWOT analysis with interviews with public green open space stakeholders to identify Strength, Weakness, Opportunity, and Threat then formulate effective strategies to be input to the variable drivers, pressure, state, and impact.

Table 1. Variables, Supporting Data and Analysis Methods

Variables	Supporting Data	Method	Description
Drivers (triggers and legal basis for the existence of green spaces in urban areas)	Regulations related to green spaces	- Desk study	Desk study is an approach that examines based on literature studies and secondary data.
Pressure (the pressure that is felt so that it undergoes changes to the spatial arrangement)	- Population growth in the last 5 years - Vehicle number in the last 5 years - RTRW/spatial plan - Land cover condition of Mataram City (spatial image)	- Desk study - Satellite imagery	Satellite imagery is a tool used to determine the condition of a surface spatially
State (current conditions experienced by the environment)	- Air/water/noise quality outside green spaces - Temperature outside the green space - Tree density in green spaces	- Lab tests - Spatial Analysis	- Laboratory test is the measurement of environmental quality using available tools in accordance with procedures that have been accredited in the environmental laboratory of the city of Mataram. - Spatial analysis is an analysis that utilizes satellite image data to be used in accordance with the needs, in this case the existing conditions of environmental quality
Impact (perceived differences and differences in the green space area and outside the green space area)	- Delta Impact between environmental conditions outside the green space and environmental conditions within the green space - Air/water/noise quality in green spaces	- Lab tests - Delta T Analysis - Satellite imagery and spatial analysis	Delta T analysis is the temperature difference between two measurement points which includes the difference between the temperature inside the area and outside the RTH area
Response (responses that answer and formulate alternative solutions to each problem from the variables of drivers, pressure, state, and impact)	Input for Drivers, Pressure, State, and Impact variables	- SWOT Analysis - In-depth interviews with RTH stakeholders	SWOT analysis with interviews with public green open space stakeholders to identify Strength, Weakness, Opportunity, and Threat then formulate effective strategies to be input to the variable drivers, pressure, state, and impact

Source: data processed from the results of literature studies, 2023

3. RESULTS AND DISCUSSION

3.1. Drivers

Drivers are variables used in the DPSIR approach framework to determine the trigger or legal basis for the existence of an object, in this case the RTH of Mataram City. Drivers are a reflection of basic human needs and desires, which in this case take the form of policies concerning the existence of RTH contained in article 17 paragraph 3 of the 1945 Constitution that natural resources which include the earth, water and those contained therein are used for the prosperity of the community. Furthermore, followed by other policies such as Law no 26 of 2007 concerning Spatial Planning, Law no 39 of 2008 concerning the Implementation of Spatial Planning, Presidential Regulation no 47 of 2020 concerning the Ministry of Agrarian Affairs and Spatial Planning, Presidential Regulation no 48 of 2020 concerning the National Land Agency, Permen of Agrarian Affairs and Spatial Planning no 16 of 2020 concerning the Organization and Work Procedure of the Ministry of Agrarian Affairs and Spatial Planning and the latest policy, namely Permen of Agrarian Affairs and Spatial Planning ATRKBPB no 14 of 2022 concerning the Provision and Utilization of RTH. The policies made by the state or central government are then adapted and continued to regional policies and are contained in the Regional Spatial Plan (RTRW) and Spatial Detail Plan (RDTR) in each region.

3.2. Pressure

Pressure is a variable used in the DPSIR approach framework to determine the pressure or cause of changes experienced from an object, which in this case is spatial planning in Mataram City. Pressure is the activities carried out by people in urban areas that create their own pressure on the carrying capacity of the environment, especially the existing green spaces in Mataram City. Population growth and an increase in the number of vehicles can reduce the ability of carrying capacity and capacity owned by RTH.

Population growth and an increase in the number of vehicles also occur in Mataram City as can be seen in Figure 1 which contains a graph of population data and the number of vehicles every year there is an increase. Based on research conducted by (Akhirul et al., 2020) that population growth and an increase in the number of vehicles are putting strong pressure on the resource's capacity and naturalness. The increase in the number of vehicles has also caused inconvenience to the community (Ismiyati et al., 2014). The increase in population and vehicles each year is inversely proportional to the amount of green space that functions to neutralize exhaust gases from vehicles. Based on research conducted by (Hasibuan et al., 2014) that the increase in population and the increase in the number of vehicles that occur in urban areas cause a decrease in the carrying capacity of the environment as a carbon emission sink that has occurred in the Jabodetabek area in 2000-2010 with a decrease of 22,364 ha with a decrease rate of 4.7% each year. Based on the RTRW owned by Mataram City which can be seen in Figure 1.

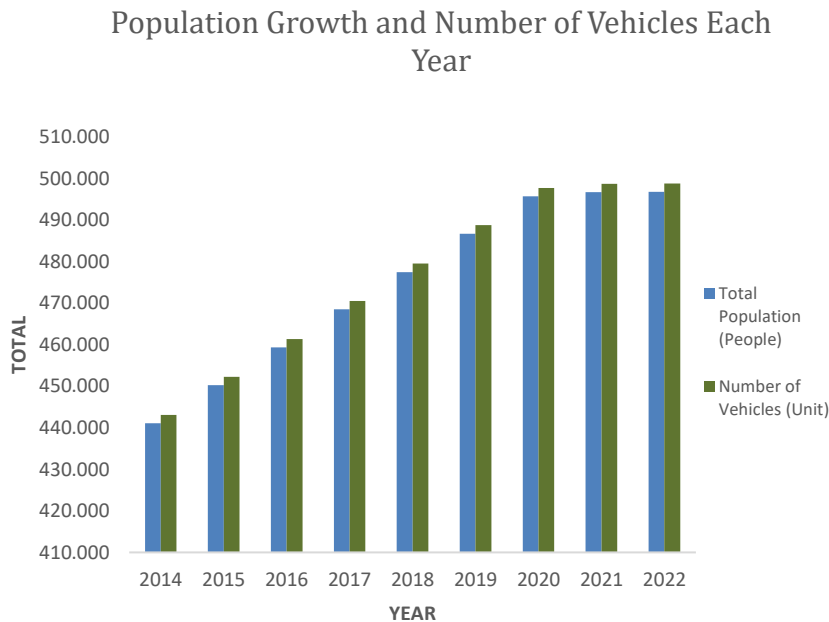


Figure 1. Population and number of vehicles

Based on the spatial pattern plan owned by Mataram City and its application becomes uncontrollable due to the increase in population and the increasing demand for housing which makes empty lands converted into residential areas (Alwan et al., 2021). Development in urban areas

characterized by population growth and urbanization also occurs in European cities, which has unclear consequences on the form of land use and urban planning (Lauf et al., 2016). If synchronizing with the current land cover condition of Mataram City which can be seen in Figure 2.

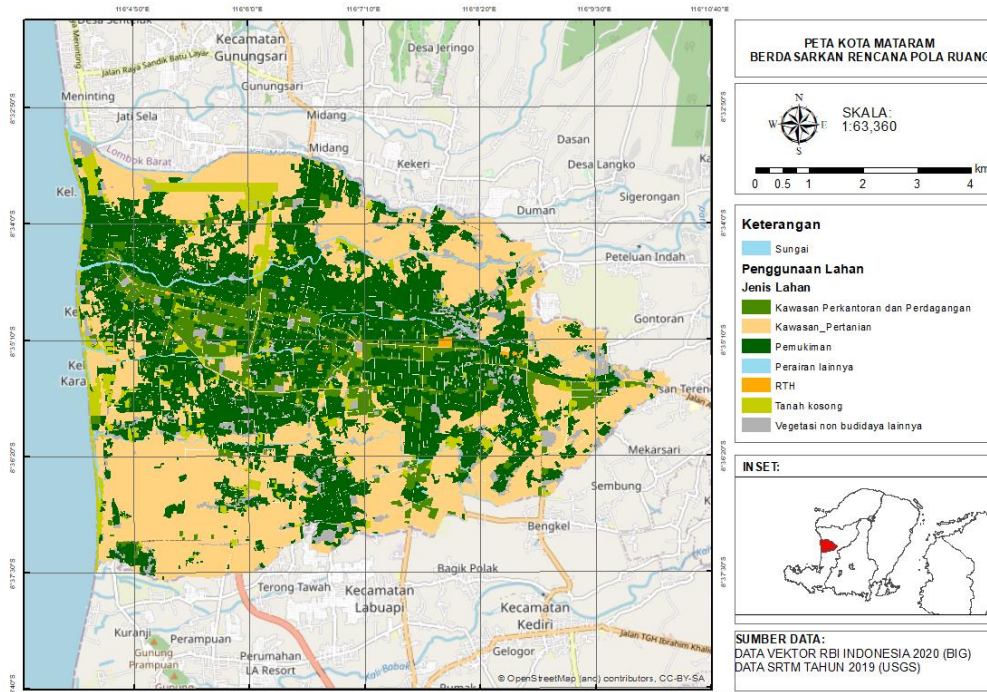


Figure 2. Map of Mataram City Based on Spatial Pattern Plan

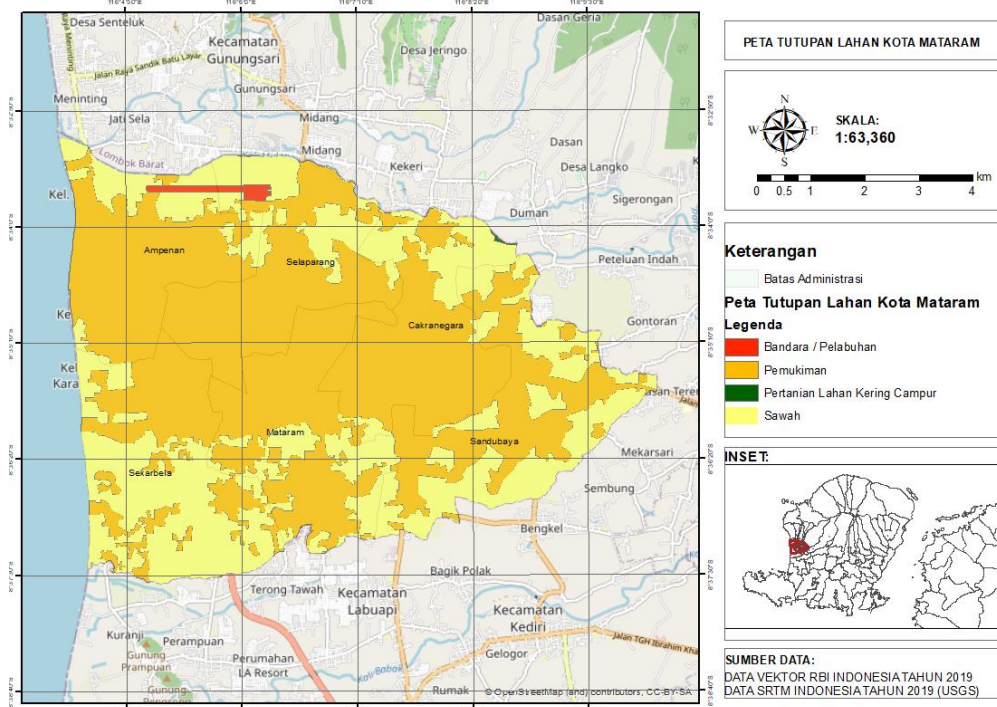


Figure 3. Land Cover Map of Mataram City

Based on the spatial pattern plan and current differences in land cover such as research conducted by (Alwan et al., 2021) that there is a change in land use caused by an uncontrolled increase in population every year that causes changes in the spatial pattern plan that has been set by the local government. Based on research conducted by (Francesch-Huidobro et al., 2016) that urban development can cause discrepancies in spatial planning and can have an impact on new problems such as flooding so that spatial planning policies are needed to maintain and improve environmental functions and ecosystem services to maintain and improve the function of ecosystem services or green spaces in urban areas.

3.3. State

State is a variable used in the DPSIR approach framework to determine the current condition of the environment experienced by an object which in this case is inside the RTH Area and outside the RTH Area in Mataram City. State (current existing conditions) is a state or condition felt by the environment as a result of pressure. The increase in population, the number of vehicles has an influence on the existing conditions of the environment which can be seen in table 2.

Air quality values as well as noise can be influenced by many factors both natural and artificial. Based on Government Regulation of the Republic of Indonesia No. 22 of 2021 Appendix VII that consecutive air quality standards which include TSP is 230 ug/Nm³ (24 hours measurement), PM₁₀ is 75 ug/Nm³ (24 hours measurement), SO₂ is 150 ug/Nm³ (1 hour measurement), CO is 10,000 ug/Nm³ (1 hour measurement), O₃ is 150 ug/Nm³ (1 hour measurement), humidity is 40-60% and based on KEP-48/MENLH/11/1996 about Noise Level Standard that RTH area with noise quality standard is 50 dB (A). The results of the measurements that have been made on several air quality parameters explain

the existence of green spaces provide services to the environment even though the noise value is still above the predetermined quality standard. The noise value obtained is influenced by several natural factors such as wind and also human activity factors that occur adjacent to the location of RTH. The wide coverage of the green space also affects the ability of the green space to reduce noise outside the green space area. Based on research conducted by (Kurniati & Zamroni, 2021) that there are several characteristics of green space areas that can function as noise absorbers, among others, vegetation height, vegetation density and area owned can minimize noise levels in the surrounding area either in villages or in transportation or industrial areas.

3.4. Impact

Impact is a result that is caused or felt from human activity, in this case population growth and vehicle activity. The existence of green spaces can have an indirect positive impact on the urban environment. Based on research conducted by (Qathrunnada et al., 2021) that the benefits provided by the existence of green spaces as a carbon sink or emissions from vehicle exhausts and provide the impact of temperature and noise changes. This statement is also supported by research conducted by (Douglas et al., 2019) that based on people's perceptions of the existence of green spaces that have an impact not only ecologically but also on the health of the surrounding community, the existence of green spaces gives a pleasant impression aesthetically, the establishment of social interaction and the environment that is maintained becomes a community need as development develops in urban areas. when viewed from table 3 shows a significant difference between environmental conditions outside the green space area and inside the green space area.

Table 2. Measurement Results of Air Quality (1-hour Measurement) and Noise Outside the RTH Area

Location of green spaces	Measurement Parameters of Air Quality and Noise of Green Spaces							
	TSP (ug/Nm ³)	PM ₁₀ (ug/Nm ³)	SO ₂ (ug/Nm ³)	CO (ug/Nm ³)	O ₃ (ug/Nm ³)	Humidity (%)	Temperature (°C)	Noise Level (dB)
Udayana Green Space	2.76	3.48	55.53	569.67	0.00	50.57	32.97	76.50
Pagutan Green Space	0.11	3.63	42.64	624.31	9.69	44.80	31.73	76.25

Source: data processed from lab test results, 2023

Table 3. Measurement Results of Air Quality (1-hour Measurement) and Noise inside the RTH Area and outside the RTH Area

	Udayana Green Space							
	TSP (ug/Nm ³)	PM ₁₀ (ug/Nm ³)	SO ₂ (ug/Nm ³)	CO (ug/Nm ³)	O ₃ (ug/Nm ³)	Humidity (%)	Temperature (°C)	Noise Level (dB)
Within the RTH Area	1.48	0.00	32.50	330.93	0.10	55.53	31.90	64.08
Outside RTH Area	2.76	3.48	55.53	569.67	0.00	50.57	32.97	76.50
	Pagutan Green Space							
	TSP (ug/Nm ³)	PM ₁₀ (ug/Nm ³)	SO ₂ (ug/Nm ³)	CO (ug/Nm ³)	O ₃ (ug/Nm ³)	Humidity (%)	Temperature (°C)	Noise Level (dB)
Within the RTH Area	2.78	1.48	32.72	231.28	34.22	51.60	30.90	55.17
Outside RTH Area	0.11	3.63	42.64	624.31	9.69	44.80	31.73	76.25

Source: data processed from lab test results, 2023

The environmental monitoring results between RTH area and non-RTH area indicated that RTH generates an environmental/environmental services positive impact for urban areas sustainability. In addition, the air quality and noise standard applied show that RTH plays an environmental services function in term of micro climate and noise control. The limitations of RTH's environmental services were due to some following reasons including land covering area, RTH's infrastructures, and coverage area (small).

The study found that the noise level of RTH Udayana was quite high even exceed the noise level standard. This condition was affected by some factors, namely location of noise level monitoring station, density of vegetation, and number of traffics. Study that conducted by (Echevarria Sanchez et al., 2017) suggested to apply special design for blocking the noise from human activities (transportation) such as plating trees at least 2 – 3 meters from noise sources. The trees could be functioned as a natural wall barrier to reduce the noise of traffics or other human activities.

Based on spatial analysis using satellite imagery data showed that the temperature inside RTH area and non-RTH was different as shown in Figure 5 and Figure 6. The difference temperature between RTH area and non-RTH area is approximately 0.83-1.07°C. In addition based on the study conducted by (Wetherley et al., 2018), the temperature difference in vegetated areas with non-vegetated was mainly caused by the functions of vegetation. The tree crowns could reduce or change the temperature in vegetated areas and inversely proportional to non-vegetated areas that create sunlight bouncing back into the

atmosphere. Another study conducted by (Klingberg et al., 2017) at Gothenberg, Sweden found that there were also differences in noise, NO₂, PAH and O₃ values in vegetated and non-vegetated areas. Air quality in vegetated park areas produces better air quality compared to areas with high traffic density.

3.5. Response

Response is a response that is expected to answer problems in other variables such as Drivers, Pressure, State, and Impact. Response is the result of in-depth interviews with stakeholders related to public green open spaces in the city of Mataram by identifying strengths, weaknesses, opportunities and threats that are owned and then formulated into a SWOT matrix. Response in an effort to answer problems that occur rarely has a direct impact on drivers but has a direct impact on pressure, state, and impact in the DPSIR framework (Kelble et al., 2013). The resulting response is obtained from a combination using the SWOT approach. If seen in Table 4.

Based on the results of the SWOT approach from the existence of green spaces, the results of strategies that are expected to answer the Drivers, Pressure, State, and Impact variables using a combination of Weaknesses (W) and Threats (T), the strategy results are obtained, namely In order to plan, structure, and use Public RTH in Mataram City more effectively and to control activities that could endanger the existence and sustainability of Public RTH and its functions and harm the environment (such as air pollution and environmental pollution), coordination and involvement of all parties government, private, and community as well as regulations are required.

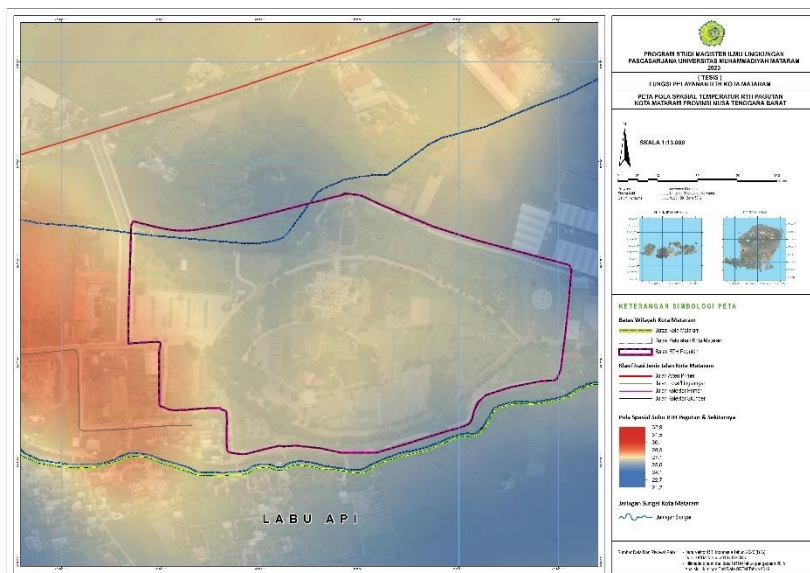


Figure 4. Temperature Distribution in the Pagutan Green Space Area and Its Surroundings

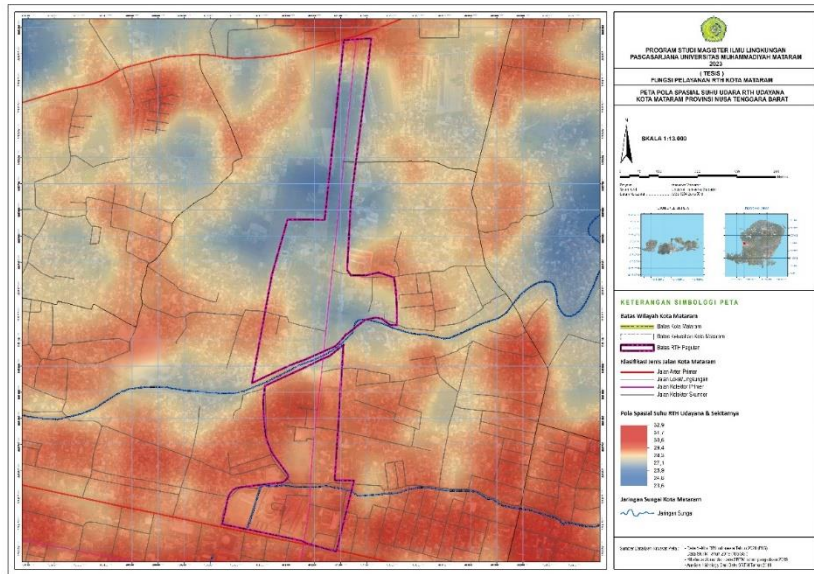


Figure 5. Temperature Distribution in the Udayana Green Space Area and Its Surroundings

Table 4. Matriks SWOT

Internal Factors		
No	Strength (S)	Weaknesses (W)
1.	Urban Ecosystem Provider which includes providing habitat for flora and fauna, helping to maintain biodiversity and maintaining the balance of the local ecosystem (microclimate).	Lack of utilization and control of owned functions
2.	Social and Interaction Spaces that create opportunities to interact, build social relationships, and strengthen the sense of community.	Significant maintenance costs to maintain beauty and sustainability
3.	Strategic areas and government centers on the island of Lombok	Lack of available land
4.	Place of physical activity and relaxation	Security and maintenance to keep it clean, well-maintained and safe for visitors
External Factors		
No	Opportunities (O)	Threats (T)
1.	The existence of RTRW as a reference for the implementation of spatial planning in Mataram City	Not optimal and maximum implementation of the RTRW Kota Mataram
2.	Increased Tourism if green spaces are beautiful and well-maintained, they can attract local and international tourists and provide economic opportunities for the surrounding area	Uncontrolled urban development and growth threatens the existence of public green spaces and reduces the amount of green space available
3.	Public desire for beautiful and well-maintained public spaces	Pollution and environmental degradation (air pollution, environmental pollution) jeopardize the ecosystem and sustainability of Public Green Space
4.	Lifestyle promotion and advocacy of healthy platforms and physical activity among the public	Abuse and crime that can reduce visitor comfort and safety
5.	Establish partnerships and collaborate with private companies to secure financial support and additional resources	

Additionally, it is crucial to strengthen community, private, and governmental cooperation in planning, regulating, and comforting public RTH in Mataram City, as well as to increase control and monitoring of the state of public RTH facilities in accordance with the theory of Components and Indicators of Public RTH Design and evaluation of the RTRW of Mataram City.

4. Conclusion

The presence of green spaces contributes to ecological ecosystem service functions that are distinguished by variations in temperature, humidity, noise levels, and air quality between the interior and exterior of the area. According to the DPSIR framework, a number of laws and regulations that mandate that metropolitan areas set aside 30% of

their land for green spaces function as "drivers" of the ecosystem service function of public green spaces. Public green spaces are under pressure due to the increase in population and number of motor vehicles every year. Existing conditions (States) show differences in the value of the measurement of noise, temperature and air quality parameters in RTH Udayana and RTH Pagutan. The impact felt by the presence of RTH shows that several environmental parameters for noise range from 12.42-20.08 dB, temperature ranges from 0.83-1.07°C and air quality (TSP, PM₁₀, SO₂, CO, O₃, Humidity) show a difference between RTH and non-RTH. This difference is a sign that green spaces offer environmental services that can improve environmental conditions and reduce negative impacts on the environment. In planning, structuring, and utilizing public green spaces in

Mataram City, coordination and cooperation with all stakeholders including the government, the business world, and the community are needed in responding to the driving factors, suppressing factors, current conditions (states), and pull factors (impact) that have been formulated using SWOT analysis. Furthermore, to guarantee the sustainability of the environmental services provided by public green areas, ongoing monitoring is required.

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