Journal of Sustainable Technology and Applied Science (JSTAS)
Vol.6 No.1, May 2025, pp. 34 - 43
ISSN: 2722-2403 (online)

URBAN ORGANISATION AREA MITIGATION STRATEGY BASED ON ENVIRONMENTAL CARRYING CAPACITY IN THE BANYUWANGI SUB-DISTRICT

Hendri Setiawati[1], Agustina Nurul Hidayati[2], Edi Rusdiyanto[3]
[1]Environmental Science Study Program, Open University, Indonesia
[2]Urban and Regional Planning Department, National Institute of Technology Malang, Indonesia
[3]Environmental Science Study Program, Open University, Indonesia

***Corresponding email: setiawatihendri@gmail.com**

ABSTRACT: Urban organisational areas are often influenced by economic activities that increase housing demand, both from the workforce and residents. This also occurs in Banyuwangi District, which serves as the Regional Activity Centre (PKW) with port, industrial, trade, and infrastructure activities. However, some areas, such as Karangrejo Village and Sobo Village, have slum organisational areas. This study aims to identify the mismatch of environmental carrying capacity in the organizational area of Banyuwangi District and to develop mitigation strategies based on environmental carrying capacity. The methods used include environmental carrying capacity analysis, land uniformity, and SWOT analysis. The results indicate that the demographic carrying capacity in the area is low, particularly due to the air resource deficit in Kampung Melayu, Panderejo, and Temenggungan Villages. Kampungmelayu, Kertosari, and Sobo Villages also face similar problems related to organisational carrying capacity. The analysis reveals that 1% of the area is not permanently suitable, including sub-districts such as Kampungmandar, Karangrejo, and Kepatihan, while the remaining 5% of the area is currently unsuitable. Only 30% of the area is considered suitable for environmental carrying capacity. Then, to find out the strategy, a SWOT analysis was carried out, which can recommend a progressive strategy (growth-oriented strategy) that focuses on developing the trade, service, tourism, and cultural sectors based on environmental carrying capacity, as well as providing basic residential infrastructure and disaster mitigation training.

Keywords: Mitigation, Urban Residential Areas, Environmental Carrying Capacity

1. Introduction

The city is the centre for the development of various activities, especially in the industrial sector, trade and services[1], [2]. The development of this city has become one of the driving forces for the community to seek residents to come and look for work and a place to live [1]. This is what drives the growth of urban organisations, along with the increasing number of residents in urban areas, the basic needs of organisations continue to increase [3].

Increasing the provision of basic human needs will have an impact on the quality of the organisational environment, including the density and regularity of buildings, as well as the availability of environmental facilities such as green open spaces or parks.[4]. The quality of the organisational environment is closely related to the level of community welfare; the lower the community welfare, the worse the organisation's condition [5]. According to Makarau[6]Five factors drive the decline in the quality of the urban environment: polluting technology, luxury consumption and waste production, social vulnerability, poverty, and inappropriate policies, as well as rapid population growth. The current problems, the increasing number of organisational and housing developments, do not balance the carrying capacity of the land and government policies in managing existing problems [7].

One of the issues is the inability of spatial planning to accommodate the increasing growth rate of housing development and organisational areas, which is exacerbated by the rise in population/number of residents requiring land for development, without considering the environmental carrying capacity, thereby causing flooding [8]. Based on data from BPBD (Regional Disaster Management Agency), in 2023, in Pakis Village, Banyuwangi District, with water flowing into the community organisation and entering residents' houses with a height of approximately

40 - 70 cm, 160 families were affected. Environmental problems in the form of flooding that occur in urban areas in Pakis Village in Banyuwangi District are due to the lack of environmental carrying capacity in the organisation's area.

In addition, there is the use of land that is not in accordance with its intended use, such as the construction of organisations without permits, and the reduction of green areas that have the potential to damage the environment, and there are also slum housing and settlements, such as unmanaged domestic waste and irregular waste disposal.[6], [9]. The slum organisation area in Banyuwangi District is located in Karangrejo Village and Sobo Sub-district, as per the Banyuwangi Regency Slum Decree of 2023. In this case, because there is a development connection between the organisation and the environmental carrying capacity in sustainable spatial planning [10].

In addition, there is a fast-growing area because Banyuwangi District is the centre of regional activities (PKW), with port activities, industry, and trade centres for services and infrastructure. Increasing housing, commercial, and industrial development can drastically change the characteristics of the area, including the elimination of agricultural land, forests, and green open spaces. [11], [12]. This fast-growing area automatically increases demand for natural resources, such as clean water, energy, and land. In this case, it will undoubtedly cause environmental damage if not adequately regulated, resulting in increased environmental pollution, including air and soil contamination. Industrial activities, transportation, and domestic waste are usually the main contributors to this pollution. The concept of agglomeration is closely related to the spatial concentration of population and economic activity.

Organisational areas that do not conform to the carrying capacity of their environment will cause problems related to housing and slums [13]. Lack of availability of Infrastructure, Facilities and Utilities (PSU) to carry out controlled arrangements in the development and construction of urban organisational areas optimally, orderly and well-organised by paying attention to environmental carrying capacity [9], [13].

Land carrying capacity and environmental carrying capacity are analytical tools related to land constraints and needs to balance land displacement and environmental damage [14]. In it there is continuity with the carrying capacity of the land in sustainable spatial planning. The arrangement for the development and construction of urban areas in Banyuwangi Regency has been carried out in accordance with the Banyuwangi Regency RTRW document. To overcome several problems, research is needed on the concept of mitigation strategies for urban organisational areas in Banyuwangi District, based on environmental carrying capacity.

2. Methodology

2.1 Research Location

The research location is in the urban area of Banyuwangi District. This area is the centre of economic and social activities in Banyuwangi Regency, East Java, which is equipped with various public facilities. Table 1 is the area of the Urban Area of Banyuwangi District.

Table 1 Area of Urban Area of Banyuwangi District

NO	Ward	Area (Ha)	Percentage
1	Mandar Village	55.31	6%
2	Malay Village	14.16	1%
3	Karangrejo	91.20	9%
4	Balancing	39.18	4%
5	The Principality	47.98	5%
6	Kertosari	39.44	4%
7	Late	100.09	10%
8	The Panderejo	23.73	2%
9	Advocacy	64.71	6%
10	Replacement	109.12	11%
11	Singaraja	39.21	4%
12	Singotrunan	103.61	10%
13	Sobo	62.36	6%
14	New Park	110.74	11%
15	The Mountain	16.20	2%
16	Carpenter	79.85	8%
	Total number	**997.01**	

The Urban Area of Banyuwangi District has an area of 997.01 hectares, which is spread across 16 sub-districts, including Kampungmandar Sub-district, Kampungmelayu Sub-district, Karangrejo Sub-district, Kebalenan Sub-district, Kepatihan Sub-district, Kertosari Sub-district, Lateng Sub-district, Pandderejo Sub-district, Singonegaran Sub-district, Singotrunan Sub-district, Sobo Sub-district, Tamanbaru Sub-

district, Temenggungan Sub-district, and Tukangkayu Sub-district (Figure 1).

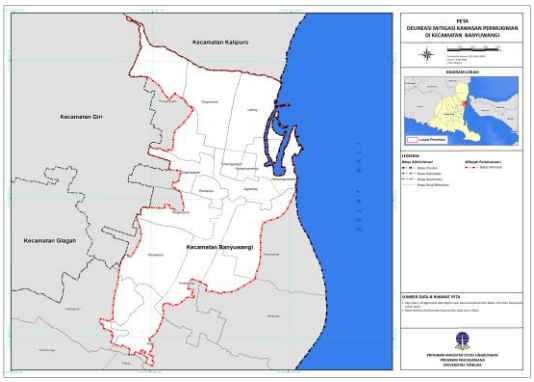

Figure 1 Research Location

2.2 Analysis Method

This study was conducted with the aim of developing an organisational area mitigation strategy based on environmental carrying capacity. To achieve this, the study employs several analytical methods, including Environmental Carrying Capacity Analysis and SWOT (Strengths, Weaknesses, Opportunities, and Threats).

2.1.1 Demographic Supporting Capacity Analysis

Demographic carrying capacity is a concept that compares the area of a region (supply) with the number of residents (demand), which is explained using normative criteria for space requirements. [15]. The details are presented in Table 2.

Table 2 Normative Space Requirements Criteria

NO	Population (People)	Space Requirements (Ha/Person)
1	10,000	0.1
2	25,000	0.091
3	50,000	0.085
4	100,000	0.076
5	250,000	0.070
6	500,000	0.066
7	1,000,000	0.061
8	2,000,000	0.057

To determine the demographic carrying capacity, the following formula can be used.

$$A = \frac{L}{P}$$

Information:
A: Land Carrying Capacity
L: Land Area (Ha)
P: Population (people)

The greater the demographic capacity value, the greater the capacity of the region, and if this value is compared with the need for space (normative), which is greater, then the region's capacity is still good. Conversely, if the value is lower than the need, then the capacity is low.[15].

2.1.2 Analysis of Water Resources Carrying Capacity

The carrying capacity of air resources is the ability of the environment or a region to meet the water needs of the population in it (residents and cultivation activities) by considering the potential availability of air resources. In simple terms, it can be formulated as follows[16]:

$$\text{DDA} = \frac{\text{PSA}}{\text{KA}}$$

Information:
DDA = air resource carrying capacity
PSA = water resource potential
KA = water requirement

With the above formulation, it can be generally determined whether a region's water resources are in a state of surplus or deficit. Surplus means the availability of air in a region is sufficient; conversely, a deficit state occurs if the availability of air is insufficient to meet air needs. Briefly interpreted as follows:

1. If DDA>1, there is an air surplus; the air is still able to support the existing population.
2. If DDA <1, there is a water deficit and the water carrying capacity is exceeded.

2.1.3 Analysis of Settlement Carrying Capacity

The carrying capacity of a region for settlements can be interpreted as the ability of an area to provide organisational land to accommodate a certain number of residents to live in a decent place. The carrying capacity of land for organisations can be formulated as follows[7], [17].

$$DDPm = \frac{LPm/JP}{a}$$

Information:

DDP = Settlement Carrying Capacity
English = Population

α =Area coefficient of space requirements/capita (m2/capita)

Based on this formulation, limits can be given regarding the suitability of land carrying capacity for organisations, namely:

- DDP> 1, capable of accommodating residents to settle.
- DDP=1, there is a balance between the population living (building houses) and the existing area.
- DDP<1, unable to accommodate residents to settle (build houses) in the area.

2.1.4 Land Suitability Analysis

Assessing land suitability classes according to Djoemantoro and Rachmawati (2002) and Sitorus (1985), as cited in Irianti (2004), it was found that land suitability can be categorised into two classes: order S (suitable) and order N (unsuitable). Land classified as order S is land that can be used for a particular use sustainably, with no or little risk of damage to its land capacity. Land classified as order N is land that has difficulties, such as forms that prevent its use for a purpose that has been considered.

Class division in land suitability level is a further division of land suitability in order. The number of classes in an order is unlimited. In this study, three classes were used for order S and one class for order N.

a. Class S1: highly suitable (very suitable), is land that has no limitations for a particular sustainable use.
b. Class S2: moderately suitable, is land that has few limitations for a particular use. These limitations will impact the productivity and profits derived from cultivating the land.
c. Class S3: conditionally suitable (conditionally suitable), is land that has limitations with a heavier level, but can still be improved by using higher technological treatments.
d. Class N: not suitable (not suitable), is land with very severe limitations so that it does not allow for a particular sustainable use.

2.1.4 SWOT Analysis

SWOT analysis is a strategic planning method used to highlight strengths, weaknesses, opportunities and threats in a development activity.[18], [19]. The four aspects are weighted based on their level of importance, ranging from 0.0 (not important) to 1.0 (very important).[20]. The total weighting is not more than the total score, which is 1.00. Then, the rating is given to each aspect, ranging from 1 (very weak) to 5 (very strong). To calculate the score, the result is obtained by multiplying the weight and rating, and then the total score is the sum of the values of IFAS and EFAS.

After the total score is obtained, the results of IFAS and EFAS can then be entered into the SWOT diagram. To find out the coordinates of IFAS as the x-axis, the determination is the total score minus the total strength score and the total weakness score. EFAS is obtained by subtracting the opportunity score and the threat score.[20].

3. Results and Discussion

The research results align with the research objectives, specifically to identify mitigation strategies for urban areas in the Banyuwangi District Urban Area.

3.1 Demographic Supporting Capacity Analysis

Demographic support capacity is determined by dividing the area by the population. The calculation results are then compared with the normative space requirement criteria.

A = 997.01 Hectares
87,992 souls

= 0.011 ha/person

According to the calculation, the demographic carrying capacity of the urban delineation in Banyuwangi District is 0.011 hectares per person. This figure shows that the carrying capacity tends to be smaller compared to the normative space requirement standards needed to meet the population's needs. Thus, it can be concluded that the urban organisation area in Banyuwangi District has a low demographic carrying capacity, which means that this area is unable to accommodate the increasing population. The details of the demographic supporting capacity analysis are shown in Figure 3.

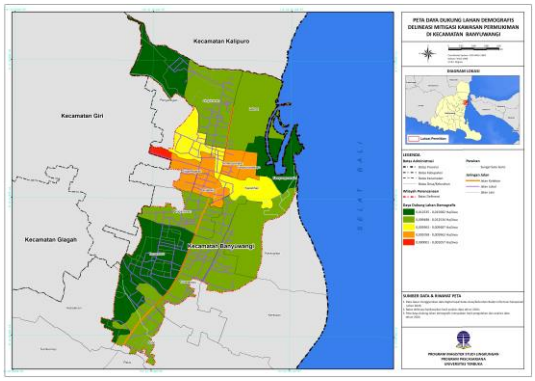

Figure 2 Demographic Carrying Capacity Map of Urban Settlement Areas in Banyuwangi District

3.2 Water Resources Carrying Capacity

The calculation of the carrying capacity of air resources is obtained from the air needs of a region and the amount of air available. Details are presented in Table 3.

Table 3 Water Resources Carrying Capacity

NO	Village/Sub-district	Water Carrying Capacity	Information
1	Mandar Village	1.93	Excess
2	Malay Village	0.65	Deficit/ Exceeded
3	Karangrejo	1.69	Excess
4	Balancing	2.26	Excess
5	The Principality	1.47	Excess
6	Kertosari	1.54	Excess
7	Late	1.6	Excess
8	The Panderejo	0.79	Deficit/ Exceeded
9	Advocacy	1.75	Excess
10	Replacement	3.62	Excess
11	Singaraja	1.05	Excess
12	Singotrunan	1.58	Excess
13	Sobo	1.89	Excess
14	New Park	2.13	Excess
15	The Mountain	0.95	Deficit/ Exceeded
16	Carpenter	1.64	Excess

Most villages/sub-districts have sufficient or surplus air availability compared to their annual needs, as seen in Karangrejo, Kebalenan, and Tamanbaru. However, several villages, including Kampung Melayu, Panderejo, and Temenggungan, experience water deficits, as water availability is insufficient to meet their daily water needs. This shows that there is variation in the distribution of air availability between regions, and some villages require more attention to overcome air shortages (Figure 4).

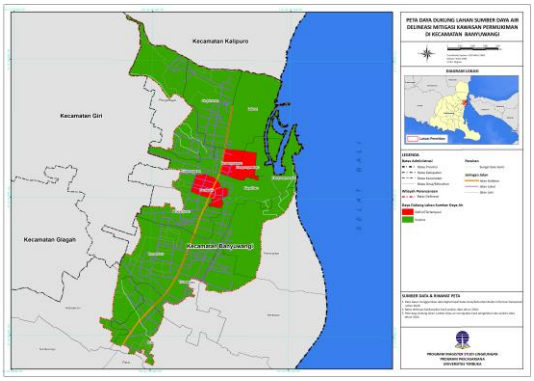

Figure 3 Map of Water Resources Carrying Capacity of Urban Settlement Areas in Banyuwangi District

3.3 Carrying Capacity of Settlement

Organisational carrying capacity uses population data, area, and land area that can be developed for the organisation. Table 4 is the result of the calculation of the organisational carrying capacity analysis in the Urban Delineation of Banyuwangi District.

Table 4 Settlement Carrying Capacity Analysis

NO	Village/Sub-district	DDP	DDPm value
1	Mandar Village	3.06	DDP >1
2	Malay Village	0.94	DDP <1
3	Karangrejo	2.79	DDP >1
4	Balancing	3.55	DDP >1
5	The Principality	2.19	DDP >1
6	Kertosari	0.85	DDP <1
7	Late	2.62	DDP >1
8	The Panderejo	1.14	DDPm =1
9	Advocacy	2.58	DDP >1
10	Replacement	1.85	DDP >1
11	Singaraja	1.62	DDP >1
12	Singotrunan	2.54	DDP >1
13	Sobo	0.94	DDP <1
14	New Park	5.39	DDP >1
15	The Mountain	1.36	DDPm =1
16	Carpenter	2.47	DDP >1
	Sum/Average	**2.24**	**DDP >1**

Based on the table above, it can be seen that overall, Banyuwangi District has a value of 2.24, indicating that the urban area of Banyuwangi District is still able to accommodate residents. However, there are three sub-districts that have

low organisational support, including Kampung Melayu Village, Kertosari Village and Sobo Village. This indicates that the three sub-districts are unable to accommodate residents to settle (Figure 5).

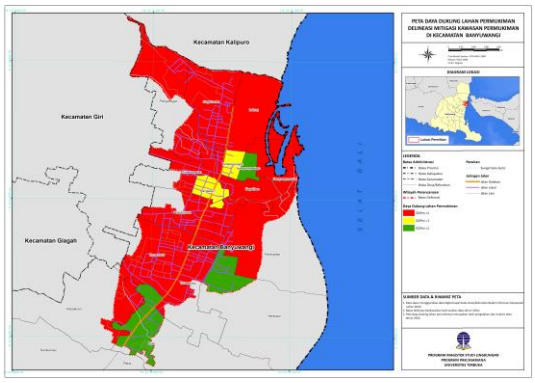

Figure 4 Map of the Carrying Capacity of Urban Settlement Areas in Banyuwangi District

3.4 Land Suitability Analysis

The analysis of the suitability of urban areas is categorised into five classifications: somewhat suitable, less suitable, appropriate, permanently unsuitable, and unsuitable for the time being. Of the five classifications, most are included in the somewhat suitable classification, covering an area of 584.98 hectares. Meanwhile, the classification is only suitable for 294.89 hectares (Table 5).

Table 5 Land Suitability Class

Ward	Somewhat suitable (S2)	Less suitable (S3)	Appropriate (S1)	Not permanently	Not suitable for now (N1)
Mandar Village	14.5	0.9	33.8	0.9	5.2
Malay Village	3.6	0.6	10.1	0.0	0.0
Karangrejo	79.3	3.8	0.0	1.6	6.5
Balancing	31.9	4.8	0.0	1.3	1.1
The Principality	28.5	6.2	5.9	2.2	5.2
Kertosari	36.8	1.0	0.0	0.0	1.7
Late	9.0	6.5	83.1	0.0	1.4
The Panderejo	21.2	0.0	0.0	0.4	2.1
Advocacy	60.5	2.5	0.0	0.6	1.1
Replacement	38.8	10.1	53.2	0.0	7.0
Singaraja	16.9	0.7	17.7	0.6	3.4
Singotrunan	17.3	6.0	79.0	0.0	1.4
Sobo	56.4	2.1	0.0	2.5	1.4
New Park	96.3	10.9	0.0	0.7	2.9
The Mountain	2.5	0.6	12.1	0.3	0.7
Carpenter	71.5	1.8	0.0	0.8	5.7
Total number	**585.0**	**58.4**	**294.9**	**12.0**	**46.8**
Percentage	**59%**	**6%**	**30%**	**1%**	**5%**

When viewed from its distribution, the classification is in accordance with an area of 294.9 hectares or 30% of the total area. The appropriate classification is only spread across several villages including Kampungmandar Village, Kampungmelayu Village, Kepatihan Village, Lateng Village, Pengantigan Village, Singonegaran Village, Singotrunan Village and Temenggungan Village (Figure 6). Meanwhile, the classification is not divided into two categories, namely permanently unsuitable and currently unsuitable, with areas of only 12.0 hectares and 46.8 hectares, or 1% and 5% of the total area.

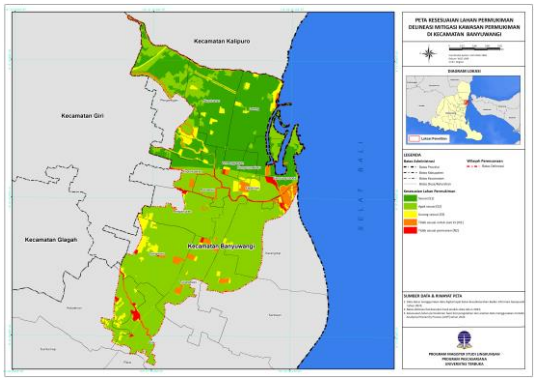

Figure 5 Land Suitability Map for Urban Residential Areas in Banyuwangi District

3.4 SWOT Analysis

SWOT analysis using IFAS and EFAS is employed to develop effective strategies for mitigating urban settlement areas based on environmental carrying capacity. Table 6 presents the weighting of each factor.

Table 6 Internal Factor Analysis Strategy

	Factor	Weight	Ranking	Score
Strength	Utilising resources that support the environment	0.13	4	0.52
	Ecological sustainability while maintaining environmental	0.14	5	0.7

	Factor	Weight	Ranking	Score
	carrying capacity and urban environmental resilience			
	Local Tourist Destinations	0.09	3	0.27
	Center for economic and trade services	0.10	4	0.4
	High fruit productivity	0.06	2	0.12
	Having a diversity of cultures and traditions	0.07	4	0.28
Weakness	Air deficit in several sub-districts	0.14	1	0.14
	Lack of facilities in Green Open Spaces (RTH)	0.06	2	0.12
	There are several sub-districts whose land can no longer accommodate residents.	0.13	1	0.13
	Limited number of public green open spaces at the sub-district level	0.08	2	0.16
	Total	**1.00**		**2.84**

Table 7 External Factor Analysis Strategy

	Factor	Weight	Ranking	Score
Opportunity	Provision of information, counselling, training, and education related to disaster management	0.16	5	0.8
	Preparation and installation of early warning system instruments	0.15	4	0.6
	Banyuwangi Urban Area is included in the strategic urban heritage area	0.07	3	0.21
	Provision of housing and organisational areas in the Banyuwangi Urban Area	0.18	4	0.72
	Tourism development focuses on recreational tourism, educational tourism, and supporting ecotourism activities.	0.08	2	0.16
	Improving drinking water network services by adding new networks in densely populated areas and areas that have not been served in the Banyuwangi Urban Area.	0.16	4	0.64
	Potential to attract investment from the private sector in tourism and infrastructure development	0.06	3	0.18
Threats	Competing with other destinations that also have their appeal	0.10	2	0.2
	Several sub-districts are areas prone to flooding	0.14	1	0.14
	Total	**1.10**		**2.25**

Table 6 shows that the IFAS score from the SWOT analysis of the urban growth area mitigation strategy is 2.84, with the main strength aspect being biodiversity while maintaining environmental carrying capacity, and a still significant weakness being air deficit in several sub-districts. The lack of water resources poses a substantial challenge to supporting community needs and achieving sustainable development in the area. Meanwhile, the EFAS score, as shown in

Table 7, indicates a value of 2.25, with the greatest opportunity being the preparation and installation of an early warning system. While the greatest threat is in several sub-districts, which are flood-prone areas.

To determine the IFAS coordinates as the x-axis, the calculation is based on the result of subtracting strengths from weaknesses, which yields a value of 1.74. EFAS is obtained by subtracting opportunities and threats, resulting in a score of 2.97. Furthermore, the position of the coordinates in the SWOT diagram will be known in Figure n.

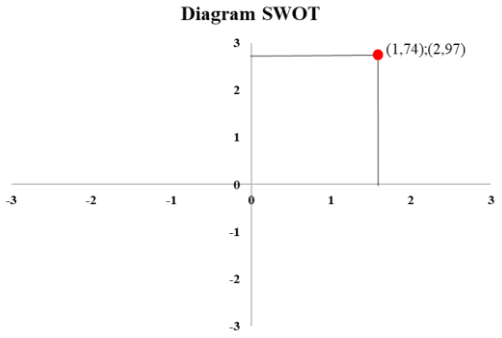

Figure 6 SWOT Diagram of Urban Residential Area Mitigation Strategy

From Figure 7, the position of the microorganism area mitigation strategy is in the Progressive or Growth-Oriented Strategy quadrant. This means that the urban settlement area of Banyuwangi District is in good condition, so it is very possible to continue development related to the mitigation of urban settlement areas through the right strategy. This quadrant will be correct if using the Strength-Opportunity (SO) strategy, namely maximising strength by taking available opportunities, so that strategic steps remain aggressive.

The strategy focuses on the development of trade, services, tourism, and cultural sectors, as well as the provision of sustainable basic organisational infrastructure. This strategy aims not only to encourage economic growth through these leading sectors but also to ensure that the development of urban areas is carried out with consideration for environmental carrying capacity.

In the context of organisational area mitigation, this strategy emphasises the importance of providing disaster management facilities, such as clean water networks, drainage, and green open spaces (RTH), that function as water catchment areas to mitigate water deficits and flood risks. In addition, disaster mitigation training for the community needs to be improved so that they are better prepared to face potential natural disasters that can threaten the organisational area, especially in areas with low environmental carrying capacity.

4. Conclusion

Urban areas in Banyuwangi District face significant challenges related to their low demographic carrying capacity, indicating that this area is struggling to accommodate a growing population. This condition is exacerbated by the water deficit in several sub-districts, such as Kampung Melayu, Panderejo, and Temenggungan, where the air supply is insufficient to meet daily needs. This indicates that the capacity of environmental infrastructure, particularly in relation to clean water, is insufficient to support the lives of people in the area.

In addition, the organisational carrying capacity in several sub-districts, such as Kampung Melayu Sub-district, is also relatively low. The non-conformity of this area's classification is divided into two categories: permanent non-conformity and current non-conformity, which cover 1% and 5% of the total area, respectively. These areas require more attention in terms of management and improvement of their environmental carrying capacity, as unchecked conditions will compromise the quality of life for the population and increase the risk of ecological disasters.

To formulate an effective strategy, a SWOT analysis was conducted, providing a comprehensive picture of the strengths, weaknesses, opportunities, and threats faced. The results of this analysis recommend the implementation of a progressive strategy, also known as a growth-oriented strategy, which focuses on growth. This strategy is specifically directed at optimising development resources while also considering environmental carrying capacity for city resilience.

In addition, this strategy also includes important steps in providing basic infrastructure in the organisation's area, to support the quality of life of the community and encourage sustainable development. In addition, this strategy emphasises the importance of disaster mitigation training as part of efforts to improve community preparedness for the risk of natural disasters. Therefore, the implementation of this strategy is not only aimed at encouraging economic growth,

but also ensuring resilient and sustainable development for the entire community.

This study has certain limitations, as it does not yet comprehensively cover all stages of urban settlement mitigation based on environmental carrying capacity. The focus of the analysis remains limited to the current conditions. At the same time, long-term mitigation planning, including the pre-disaster, emergency response, and post-disaster phases, has not been thoroughly explored. In addition, limitations in field data availability and research time have also constrained the scope of this study. Therefore, further research is needed to integrate all stages of mitigation comprehensively, so that the strategies developed can effectively enhance the resilience of urban areas in a sustainable way.

References

[1] F. R. Harahap, "Dampak Urbanisasi Bagi Perkembangan Kota Di Indonesia," *Society*, vol. 1, no. 1, pp. 35–45, Jun. 2013, doi: 10.33019/society.v1i1.40.

[2] K. Putri and M. A. Ridlo, "Studi Literatur: Strategi Penanganan Permukiman Kumuh Di Perkotaan," vol. 3, no. 1, 2023.

[3] R. C. Joenso and S. R. Sari, "Klasifikasi Kekumuhan Dan Konsep Penanganan Permukiman Kumuh Perkotaan (Studi Kasus : Permukiman Lampu Satu, Merauke)," *ARCADE*, vol. 4, no. 2, p. 94, Jul. 2020, doi: 10.31848/arcade.v4i2.366.

[4] P. Ekartaji, H. S. Yunus, and N. Rahardjo, "Kajian Kualitas Lingkungan Permukiman Di Daerah Pinggiran Kota Kasus Di Desa Ngestiharjo, Yogyakarta.," Aug. 2014, doi: https://doi.org/10.22146/mgi.13069.

[5] D. P. Wijayanti, M. J. Rahayu, and R. P. Utomo, "Ketercapaian Perwujudan Lingkungan Permukiman Layak Huni Dalam Rangka Program Penataan Lingkungan Permukiman Berbasis Komunitas (Plpbk) Di Kabupaten Karanganyar," *ARST*, vol. 13, no. 2, Nov. 2017, doi: 10.20961/arst.v13i2.15636.

[6] V. H. Makarau, "Penduduk, Perumahan Pemukiman Perkotaan Dan Pendekatan Kebijakan," 2011.

[7] M. A. Lasaiba, P. Ansiska, and E. G. Tetelepta, "Analisis Spasial Daya Dukung Lahan Dan Pertumbuhan Permukiman Di Kecamatan Sirimau," *J. Tanah dan Sumberdaya Lahan*, vol. 11, no. 2, pp. 367–377, Jul. 2024, doi: 10.21776/ub.jtsl.2024.011.2.8.

[8] Suryanto, "Daya Dukung Lingkungan Daerah Aliran Sungai Untuk Pengembangan Kawasan Permukiman (Studi Kasus DAS Beringin Kota Semarang)," *Universitas Diponegoro*, 2007.

[9] N. Sofwan Santosa, "FAKTOR-FAKTOR YANG MEMPENGARUHI KEBERKELANJUTAN PENGELOLAAN PERMUKIMAN PERKOTAAN DI CISAUK," *JTSA*, vol. 20, no. 1, May 2021, doi: 10.54564/jtsa.v20i1.66.

[10] B. B. Rahman and S. Putro, "Kualitas Lingkungan Permukiman Di Kelurahan Miroto, Kecamatan Semarang Tengah Kota Semarang," 2022.

[11] R. Purnayudhanto, M. Sibly, and Q. S. Nugraha, "Analisis Perubahan Fungsi Lahan Terhadap Ruang Terbuka Hijau Dalam Kurun Waktu 2004-2022 di Kelurahan Srengseng Sawah Jakarta Selatan".

[12] F. Z. Arridho, "Game Edukasi Pengumpulan Sampah Organik Dan Anorganik Menggunakan Finite State Machine," vol. 1, no. 1, 2017.

[13] A. R. S. Sari and M. A. Ridlo, "Studi Literature : Identifikasi Faktor Penyebab Terjadinya Permukiman Kumuh Di Kawasan Perkotaan," *JKR*, vol. 1, no. 2, p. 160, Jan. 2022, doi: 10.30659/jkr.v1i2.20022.

[14] P. P. Sari, V. H. Makarau, and R. M. S. Lakat, "Analisis Daya Dukung & Daya Tampung Lahan Di Kecamatan Girian Kota Bitung Untuk Pengembangan Permukiman," *Jurnal Perencanaan Wilayah dan Kota*, vol. 8, no. 1, 2021.

[15] Muta'ali L., "Teknik Analisis Regional Untuk Perencanaan Wilayah, Tata Ruang dan Lingkungan," Yogyakarta: Badan Penerbit Fakultas Geografi (BPFG) Universitas Gadjah Mada, 2015.

[16] "Peraturan Menteri Negara Lingkungan Hidup Nomor 17 Tahun 2009 Tentang Pedoman Penentuan Daya Dukung Lingkungan Hidup Dalam Penataan Ruang Wilayah."

[17] Muta'ali L., *Daya Dukung Lingkungan untuk Perencanaan Pengembangan Wilayah*. Badan Penerbit Fakultas Geografi (BPFG) Universitas Gadjah Mada, 2012.

[18] D. M. Sasoko and I. Mahrudi, "Teknik Analisis Swot Dalam Sebuah Perencanaan Kegiatan," vol. 22, 2022.

[19] Y. Monika, P. Pudjianto, and R. Rasidar, "Strategi Peningkatan Penerimaan Pajak

Bumi Dan Bangunan Perdesaan Dan Perkotaan Pada Badan Keuangan Daerah Kota Pontianak," *Publik Administrasi*, vol. 10, no. 3, Sep. 2021, doi: 10.26418/publika.v10i3.2847.

[20] Y. Hernawan, M. Musafa, and S. W. K. Dewi, "Aplikasi Pembobotan, Rating & Skoring Pada Analisis Swot Masa Kondisi Covid-19 Diperkebunan Kopi Palasari Kabupaten Bandung," *AdMathEdu*, vol. 10, no. 1, p. 37, Jun. 2020, doi: 10.12928/admathedu.v10i1.17947.