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Analysis of Policy Strategies to Control the Conversion of Wetland Rice Land to Non-Agricultural Land Use in Palembang City South Sumatra

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Abstract: Land conversion is an activity that changes the land area's function into a new area and has another function that impacts environmental problems and land potential. The impact of land conversion is the loss of rice fields, which causes rice production to decline. Therefore, it is very relevant to analyze the policy strategy of agricultural land conversion to support the control of agricultural land conversion in Palembang City. This research was conducted in Palembang City in 2023 using a survey method, purposive sampling of 23 key informants. SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis was used to answer this research. The results showed aggressive strategies that can be applied to control the conversion of lebak swamp land in Palembang City, namely, maintaining the level of rice productivity along with high demand, accelerating the preparation of Regional Regulations related to Sustainable Food Agricultural Land, improving the performance of agricultural extension institutions to supervise and provide counselling, increasing the competitiveness of farmers given the existing potential and creating innovations with superior agricultural product centres in local business development-based areas.

Keywords: Aggressive strategy, Land conversion, Swot matrix

1. Introduction

Agriculture is a sector that plays a vital role in the economy because it provides for the community's needs, and the most vulnerable agricultural land is rice fields. Rice fields are a medium for farming activities to produce staple food (rice) for the community's needs [1]. Indonesia is an agricultural country where the role of the agricultural sector is essential for the economy, but due to the conversion of rice fields into non-agricultural land, the production of food crops has decreased [2]; [3]. The cause of conversion of paddy fields often occurs in Indonesia because the previous government's development policy focused more on increasing rice, so the development of paddy field infrastructure was broader than dry land [4].

Land is a resource that cannot be produced, causing the availability of land to be limited due to the high demand for land for various activities causing land to be limited [5]. This land limitation occurs due to population growth, which continues to increase. The biggest threat from this land limitation is land conversion, which causes the loss of agricultural land [6] [7]. Land conversion is an activity that changes the land area and its function into a new area, which has another function and impacts environmental problems and land potential [8].

The process of changing the function of paddy fields affects the socio-economic activities of farmers, from remaining farmers to becoming non-permanent employees, working in industry, or no longer working. Thus, the conversion of paddy fields can be seen to affect farmers' livelihoods [9]. The impact of land conversion is the loss of paddy fields, which decreases rice production [10]. Other conversion impacts include loss of residence, livelihood, and environmental pollution [11].

The general driving factors that make the conversion of rice fields are road construction, transportation facilities, settlements, non-agricultural industries, and shopping centres, but the most that occur in life is that the conversion of agricultural land occurs due to settlement development and road construction [12]. This land conversion also has economic factors originating from land prices, economic activity, competitiveness in agricultural products, or the economic situation of the farmer's family [13]. This land conversion also occurs due to changes in lifestyle in society, such as the trend of houses being used as future investments, which is one of the factors for land conversion [14]; [15].

Land conversion occurs in almost every region in Indonesia, and South Sumatra Province is no exception. Loss of agricultural land often occurs in suburban areas

due to the expansion of new residential areas, industries, offices, and other public facilities [16]. South Sumatra is one of the provinces in Indonesia located in the southern part of Sumatra Island, with the capital city of Palembang. Land conversion also occurs due to government policies or regulatory aspects issued by the government [17].

Currently, the rate of land conversion of wetland rice paddies for Palembang City absolutely must be known, this is so that the development carried out still pays attention to existing agricultural land to be able to continue to produce food sources. Policies issued by the government are not fully related to the causes of land conversion, in this case the internal factors of farmers and the surrounding conditions. Therefore, it is very relevant to analyze the policy of agricultural land conversion to support the control of agricultural land conversion in Palembang City, South Sumatra, Indonesia.

The land conversion rate of wetland rice paddies for Palembang City must be known. Hence, the development still pays attention to existing agricultural land so that food sources can continue to be produced. Policies issued by the government are not entirely related to the causes of land conversion, in this case, the internal factors of farmers and the surrounding conditions. Therefore, it is very relevant to analyze the policy of agricultural land conversion to support the control of agricultural land conversion in Palembang City, South Sumatra, Indonesia.

2. Material and Methods

2.1. Materials (Times New Roman 11)

The research was conducted in Palembang City in 2023. The data collected were primary data and secondary data. Primary data collection was obtained through interviews and questionnaires. Primary data was collected directly from 24 main respondents, namely the Palembang City Government. Primary data collection is directly involved in policy-making to control the conversion of paddy fields to non-agricultural land uses. The selection of key informants was conducted considering that the information collected was relevant to the information provided by key informants using in-depth and structured interviews using questionnaires. The list of key informants can be seen in Table 1.

Table 1. List of Key Informants from Various Stakeholders

No.	List of Key Informants from Various Stakeholders	Total
1	Head of Palembang City Agriculture and Resilience Office	9
2	Agriculture, Food Crops and Horticulture Office of South Sumatra Province	1
3	Regional Development Planning Agency Palembang City	2
4	Palembang City Council	1
5	Public works and housing Palembang City	1
6	Palembang City Investment and One-Stop Integrated Service Office	1
7	Sub-district Heads and Village Heads of Palembang City	6
8	Palembang City Farmer Group Association	3

2.2. Methods

2.2.1. Sample collection and preparation

For lime preparation, mussel shells were collected from Indralaya, Ogan Ilir, South Sumatera, Indonesia. The samples were washed and air-dried, then activated by burning them in a furnace at 800oC for one hour and sieved.

2.3. Experimental variable and analytical procedures

Water quality, survival and growth performance results were statistically analyzed according to the two-way Anova to detect if there was any significant influence due to experimental treatments. When the influence was at least significant, the means were compared using Dunnett test with P5 as control for P1, P2, P3 and P4. The 5% significance level was adopted in all statistical analysis. Water quality, survival, and growth performance results were statistically analyzed according to the two-way ANOVA to detect if there was any significant influence from experimental treatments. When the influence was at least significant, the means were compared using the Dunnett test with P5 as a control for P1, P2, P3, and P4. The 5% significance level was adopted in all statistical analyses.

2.4. Data Analysis

The direction of the land use change control strategy was carried out through a SWOT analysis approach (Strengths, Weaknesses, Opportunities, Threats) which is commonly used in formulating policy strategies. In the SWOT analysis, after identifying the external and internal factors, the weighting of each external and internal variable and factor obtained from the respondents were arried out. Then the weighting and rating of the two variable factors are then analyzed to compile strategic factors using the SWOT matrix.

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of each external and internal variable and factor obtained from the respondents was carried out after identifying the external and internal factors. The weighting and rating of the two variable factors are then analysed to compile strategic factors using the SWOT matrix.

The factors that become strengths in controlling the conversion of paddy fields include:

1) High productivity of rice plants,
2) Labor is a family member,
3) Long farming experience,
4) Accessibility is favorable, and
5) Supportive agricultural infrastructure

Factors that are weaknesses in the strategy to control land conversion include:

1) Farmers are dominated by the older generation,
2) Low farmer education,
3) The area of cultivated land is relatively narrow,
4) Dominant land ownership as a cultivator,
5) The number of family members covered

Factors that become opportunities in the land conversion control strategy include:

1) Demand for rice is high,
2) Preparation of Sustainable Food Agricultural Land draft regulation,
3) High frequency of counseling,
4) Location of Palembang City,
5) Coordination between related agencies is good

Meanwhile, factors that pose a threat to the strategy of controlling land conversion include:

1) Land conversion,
2) Change from agricultural to non-agricultural labor,
3) High input prices,
4) The service sector is higher than agriculture,
5) Associated with many interests

The SWOT elements are then linked to get several alternative strategies, namely the SO (Strengths-Opportunities), WO (Weakness-Opportunities), ST (Strengths-Threats) and WT (Weakness-Threats) strategies. Data analysis to compile strategic factors, processed in the form of a SWOT matrix. This matrix can clearly illustrate how external opportunities and threats are likely to arise, as well as adjustments to the strengths and weaknesses possessed.

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3. Results and Discussion

3.1. Respondent Identity

The identity of respondents is important in research, as it provides important context for the results. The identity of respondents can also influence the way they interpret questions and respond. By paying attention to the identity of respondents, researchers can better understand how these factors affect the results of the study. The identity of respondents is essential in research, as it provides important context for the results. Respondents' identities can also influence how they interpret questions and respond. By paying attention to respondents' identities, researchers can better understand how these factors affect the study's results.

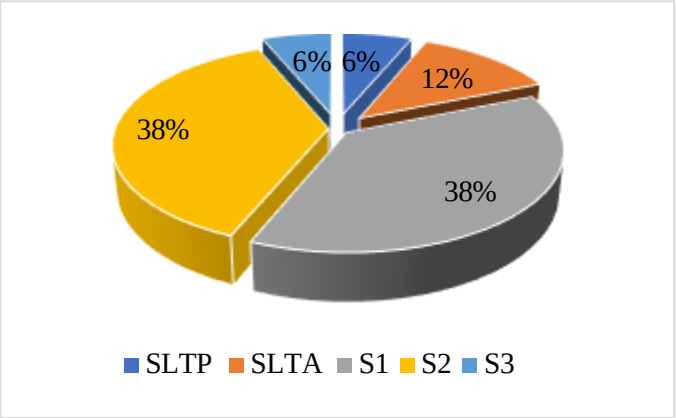

Figure 1. Education level of respondents

Figure 1 shows that the education level of the respondents in this study is mostly at the S1 and S2 levels, with 38% each. This is followed by high school with 12% percent and junior high school and elementary school with 6% each. It can be seen that the respondents in this study are all educated because considering most of their jobs are civil servants in government offices. By understanding the respondents' educational background, researchers can relate their findings to different levels of understanding and experience. The level of education also affects respondents' understanding of a matter [18].

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Paying attention to the gender of respondents helps researchers understand these differences and analyze how gender factors affect responses and attitudes towards research topics. The majority of respondents in this study were male with a percentage of 75% of the total 24 respondents, the remaining 25% were female respondents, as can be seen in Figure 2.

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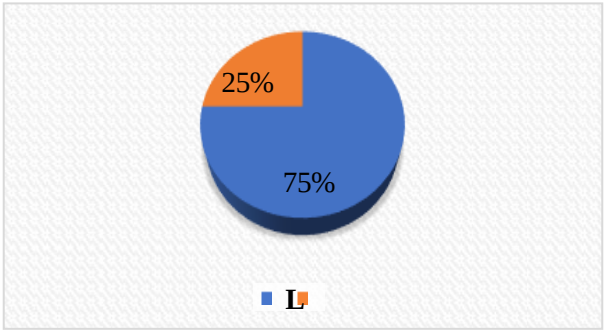

Figure 2: Gender of Respondents

3.2. SWOT (Strengths, Weaknesses, Opportunities, and Threats) Analysis.

SWOT Analysis Development of Agricultural Land Transfer Policy to Support the Control of Agricultural Land Transfer of Lebak Swamp Rice in Palembang City field observations were carried out in areas within the agricultural land area to match existing data with conditions in the community and processed to get a conclusion. Interviews were also conducted with OPDs within the Palembang City Government as well as several key informants who are practitioners in controlling the conversion of wetland rice farmland in Palembang City by being asked for information related to the existing conditions of the development of agricultural land conversion policies in this region.

Furthermore, the processed data is analyzed using several relevant data processing methods, including the scoring method with SWOT analysis to analyze policy strategies for the conversion of wetland rice farming land in Palembang City. Furthermore, the results of the data processing were interpreted systematically and then continued with a descriptive, structured, and systematic discussion. The results of the analysis and discussion will ultimately be used to formulate recommendations to support the control of agricultural land conversion.

The SWOT analysis method used to analyze strategies can be seen from the score of external and internal factors, whether the strengths and opportunities are more significant than the weaknesses and threats or vice versa. SWOT analysis considers and compares the external environmental factors of opportunities and threats faced with the internal environment of strengths and weaknesses. These internal and external factors are compiled using the IFAS (Internal Factors Analysis Summary) matrix and the EFAS (External Factors Analysis Summary) matrix.

Internal Factor Analysis Summary (IFAS) and External Factor Analysis Summary (EFAS) were conducted to determine the variables included in the strengths, weaknesses, opportunities, threats (SWOT). IFAS = Internal Strategic Factors Analysis Summary, which consists of the strengths and weaknesses of land use change. EFAS = External Strategic Factors Analysis Summary, which consists of opportunities and threats to land conversion. After analyzing the internal and external factors, the next step is to weight each value contained in the strengths, weaknesses, opportunities, and threats. The assessment was conducted with 24 (twenty-four) stakeholders who are OPDs within the Government and community leaders in Palembang City. Giving weight to each variable factor ranging from 1.0 (very important) to 0.0 (not important). All of these weights should not exceed the total score of 1.0. Factors that have the greatest influence are given the highest weight.

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Furthermore, ratings for each variable with a scale ranging from 4 (very strong) to 1 (weak) are based on the influence given by respondents related to the conversion of wetland swamp land in Palembang City. Rating is positive for strengths and opportunities, meaning that the greater the strengths and opportunities that exist, the greater the rating; if the strengths and opportunities are significant, a rating of 4 will be given, and vice versa. If it is small, a rating of 1 will be given. Meanwhile, for weaknesses and threats, it is negative, meaning that the higher the weaknesses and threats, the smaller the rating.

Then the calculation of the weighting score value can be done, which is the result of multiplying the sum of the weights of each factor, both external and internal, against the rating obtained. This is done to determine the score of each factor. Table 2. shows the calculation of

IFAS weights for strength and weakness variables. Then, the weighting score value can be calculated, which is the result of multiplying the sum of the weights of each factor, both external and internal, against the rating obtained. This is done to determine the score of each factor. Table 2 shows the calculation of IFAS weights for strength and weakness variables.

Table 2. Internal Factors Analysis Summary Matrix (IFAS)

No.	Strategic Factors	Weight (B)	Rate (R)	Total score (B x R)
A	Power			
	1. High rice productivity	0,20	1,57	0,31
	2.Laborers are family members	0,20	2,48	0,50
	3. Long farming experience	0,20	2,43	0,49
	4. Accessibility supports	0,22	2,43	0,53
	5. Farming is the main occupation	0,19	1,78	0,34
Total				2,2
B	Weaknesses			
	1. Old age of farmers	0,21	1,70	0,36
	2. Low farmer education	0,19	2,13	0,40
	3. Narrow cultivated land area	0,20	1,83	0,37
	4. Tenant-dominant land ownership	0,20	1,35	0,27
	5. Large number of family members	0,20	2,39	0,48
	Total			1,9
	Total A+B			4,1

Source: Primary Data

Furthermore, Table 3 shows the calculation of EFAS weights for opportunity and threat variables. Weight is the average respondent's answer divided by the EFAS weight for each indicator of the opportunity and threat questions. Rating is an assessment that shows the importance of each factor.

Table 3. External Factors Analysis Summary (EFAS) Matrix

No.	Strategic Factors	Weight (B)	Rate (R)	Total score (B x R)
A	Opportunities			
	1. High demand for rice	0,20	1,78	0,36
	2. Regional Regulation on the Protection of Sustainable Food Agricultural Land is being drafted	0,19	1,30	0,25
	3. High frequency of counseling	0,20	2,48	0,50
	4. Location of Palembang City	0,22	1,22	0,27
	5. Coordination between related agencies is good	0,20	2,09	0,42
	Total			1,8
B	Threat			
	1. High land conversion	0,21	1,30	0,27
	2. Transfrom agriculture to the non-farm sector	0,20	1,39	0,28
	3. High input prices	0,19	1,61	0,31
	4. The service sector is more advanced than agriculture	0,21	1,52	0,32
	5. Associated with many interests	0,20	2,17	0,43
	Total			1,6

Source: Primary Data

Then, matching the score values of the existing external and internal factors with the SWOT Analysis quadrant aims to determine the current business position in which quadrant and decide the strategy's focus that should be used later. The total weighting score will show the importance of internal and external environmental factors in developing agricultural land conversion policies to support the control of agricultural land conversion in Palembang City.

The X axis describes internal factors, and the Y axis uses external factors. From the results of the matrix values in Tables 2 and 3, the calculation of the matrix quadrant value is obtained, namely for the X value, namely the difference in total strengths minus total weaknesses. And for the Y value, the difference between the total opportunities minus the total threats. The results of the x-value and y-value matrices are as follows:

$X = \sum S - \sum W$

$X = 2,2 - 1,9$

$X = 0,3$

While the value of y is as follows:

$Y = \sum O - \sum T$
$Y = 1{,}8\text{-}1{,}6$
$Y = 0{,}2$

After calculating the x value and y value, the SWOT diagram in Figure 3 is a SWOT analysis quadrant. Based on the scores obtained through the IFAS and EFAS matrix analysis, whether opportunities (+) or threats (-) and whether strengths (+) outweigh weaknesses (-) can be seen in the SWOT analysis quadrant in Figure 3. Based on Figure 3. shows that the control of land use change in Palembang City is in quadrant I (positive, positive). It indicates that the land condition is in a strong and opportunity condition. This position indicates that the wetland has strengths and opportunities to take advantage of existing opportunities. The strategy that must be determined in this quadrant is to support aggressive growth policies because the position in quadrant I indicates that the condition is very favourable because there are opportunities and advantages it can use.

Table 4. SWOT Matrix Analysis

EFE	Strength (S) 1. Rice productivity is high. 2. Laborers are family members. 3. Long farming experience. 4. Accessibility is favorable. 5. Farming is the main occupation.	Weakness (W) 1. Farmers are old. 2. Farmers' education is low. 3. The area of cultivated land is narrow. 4. Land ownership is dominated by tenants. 5. There are many family members.
Opportunities (O) 1. High demand for rice 2. Perda PLP2B is being drafted 3. High frequency of counseling 4. Location of Palembang City 5. Coordination between related agencies is good	Strategy (SO) 1. Maintaining rice productivity levels in line with high demand (S1, S2, O1, O5) 2. Acceleration of the preparation of Regional Regulations related to Sustainable Food Agricultural Land (LP2B) (S5, O2, O5) 3. Improve the performance of agricultural extension institutions to supervise and provide extension services (S4, O3). 4. Increase farmers' competitiveness given the existing potential (S1, S2, S3, O4) 5. Create innovations with leading agricultural product centers in the region based on local business development (S1, S4, O4).	Strategy (WO) 1. Stakeholders participate in educating farmers to support land conversion control (W1, W2, O5). 2. Socialization in order to form a culture or habit of the community to avoid land conversion (W1, W3, W4, O3). 3. Diversify agricultural products by utilizing the existing workforce (W5, O1) 4. Creating economic opportunities as an additional source of income outside of agriculture without having to convert land use (W5, O4). 5. Maximize support and supervision from the government (W4, O2, O5).

Threats (T)	Strategy (ST)	Strategy (WT)
1. High land conversion 2. Transfrom agriculture to non- farm sectors 3. High input prices 4. Service sector is more advanced than agriculture 5. Associated with many interests	1. Policy to provide incentives to farmers who maintain their productive land (S1, T1, T3). 2. Improve counseling to avoid the lack of agricultural to non-agricultural employment (S5, T5) 3. Development and expansion of equitable and appropriate distribution of logistical assistance for seeds/seedlings, fertilizers, agricultural tools and machinery (alsintan). 4. Improved accessibility, agricultural facilities and infrastructure in the local area (S1, S4, T1, T2).	1. Involvement of community participation in the process of planning, implementation and supervision of programs in the food agriculture sector. As well as regular socialization of the importance of food agricultural land to regional food security (W1, T1). 2. Institutional strengthening through active involvement of farmer groups (gapoktan) in food farming programs and increasing the capacity of farmers' human resources through extension and skills training (W2, W5, T4). 3. Increasing agricultural production financing assistance, as well as ensuring farmers' easy access to cheap and quality seeds, fertilizers, agricultural tools

	5. Facilitate access to clearer product marketing for farmers (S5, T4) .	and machinery (alsintan) (W4, T3) 4. Strengthening the market network for agri-food products by increasing farmers' access to domestic and international markets, and stabilizing the basic price of agricultural products (W3, T2). 5. Maintain price stability of food agricultural land through incentive and disincentive instruments, increase food agricultural production, and tighten the process of non- food agricultural licensing on paddy fields (W4, T3, T4).

The strategy recommendation is a progressive growth policy (growth-oriented strategy), with aggressive policy options that can be chosen to maintain the level of rice productivity along with high demand and accelerate the preparation of Regional Regulations related to Sustainable Food Agricultural Land (LP2B). Furthermore, it will improve the performance of agricultural extension institutions to supervise and provide counselling. In addition, it will increase farmers' competitiveness, given the existing potential and create innovations with centres of superior agricultural products in local business development-based areas. Then the last stage is the determination of alternative strategies using the SWOT matrix. The SWOT matrix is used to determine an excellent strategy to support the control of the conversion of wetland rice farming land in Palembang City, which is organized into 4 (Four) strategies, namely SO, WO, ST, and WT, in Table 4.

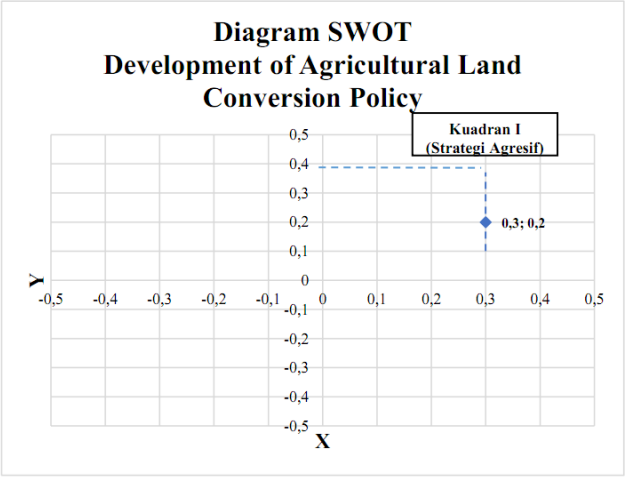

Figure 3. Quadrant of SWOT Matrix Analysis

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4. Conclusions

The results of the analysis of strategies created or formulated using the internal strengths of the conditions of wetland swamp land in Palembang City to take advantage of existing opportunities are in Quadrant I (Strength, Opportunity). The following are aggressive strategies that can be applied to control the conversion of wetland swamp land in Palembang City, namely as follows: 1) Maintaining the level of rice productivity in line with high demand (S1, S2, O1, O5); 2) Accelerate the preparation of Regional Regulations related to Sustainable Food Agricultural Land, (S5, O2, O5); 3) Improve the performance of agricultural extension institutions to supervise and provide counselling (S4, O3); 4) Increase the competitiveness of farmers given the existing potential (S1, S2, S3, O4); and 5) Create innovations with centres of superior agricultural products in local business development-based areas (S1, S4, O4).

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Reference

[1] Murhaini, S., & Ludang, Y. (2020). Sociological Aspects of Transferred. International Journal of Management (IJM), 11(3), 247-255.

[2] Alamsyar, A., -cyio, M. B., & Damayanti, L. (2018). Conversion of Agricultural Land and Its Impact on Rice Production in Sigi Regency. AGROLAND: The Agricultural Sciences Journal, 5(1), 32. https://doi.org/10.22487/j24077593.2018.v5.i1.10458.

[3] Widyawati, A. T., Nurbani, Prasetyo, W. B., Manurung, S. E., & Pebriadi, A. M. (2021). The effect of rice field conversion and its impact on food availability in North Kalimantan Province. IOP Conference Series: Earth and Environmental Science, 824(1). https://doi.org/10.1088/1755-1315/824/1/012059.

[4] Harjanti, L. T., & Hara, Y. (2020). The Determinants of Paddy Fields Conversion in Java and Sumatra. Journal of Economics & Public Policy, 3, 39-52. https://dprexternal3.dpr.go.id/index.php/ekp/article/view/1492%0Ahttps://dprexternal3.dpr.go.id/index.php/ekp/article/download/1492/849

[5] Febrina, W. D. (2017). Determinants of Paddy Field Conversion in Java 1995-2013. Journal of Bina Praja, 9(1), 1-13. https://doi.org/10.21787/jbp.09.2017.1-13.

[6] Kolopaking, L. M., & Koesmaryono, Y. (2017). Village-Based Institutional Development Strategy to Prevent the Paddy-Field Conversion at Pandeglang Regency, Banten, Indonesia. European Journal of Economics and Busines Studies, 7(1),40. https://doi.org/10.26417/ejes.v7i1.p40-51.

[7] Ismail, W. I. F. W., & Ngadiman, N. (2017). Land use conversion on rice production: Policies, rice productivity and paddy landowners. International Journal of Real Estate Studies, 11(2), 33-39.

[8] Umanailo, R., Nawawi, M., Sofyan, M., & Hentihu, I. (2019). Conversion of farmland namlea subdistrict. International Journal of Scientific and Technology Research, 8(8), 1861- 1864.

[9] Mu'adi, S., Maksum, A., Hakim, M. L., & Umanailo, M. C. B. (2020). Transfer of function agricultural land. Proceedings of the International Conference on Industrial Engineering and Operations Management, 0(March), 2568-2574.

[10] Fiqriyati, A. R., Panuju, D. R., & Mulya, S. P. (2022). The dynamics of rice-field conversion in the surroundings of Cipali toll-roads of Subang Regency. IOP Conference Series: Earth and Environmental Science, 950(1). https://doi.org/10.1088/1755-1315/950/1/012094.

[11] Tuan, N. T. (2022). Urbanization and land use change: A study in Vietnam Environmental & Socio-economic Studies Urbanization and land use change : A study in Vietnam. environmrntal & socio-economic stusies, June. https://doi.org/10.2478/environ-2022- 0008.

[12]Firmansyah, F., Susetyo, C., Pratomoatmojo, N. A., Kurniawati, U. F., & Yusuf, M. (2021). Land use change trend of paddy field and its influence on food security in Gerbangkertosusila Region. IOP Conference Series: Earth and Environmental Science, 778(1). https://doi.org/10.1088/1755-1315/778/1/012023.

[13]Fattah, A. N., & Purnomo, E. P. (2018). Policy Analysis of Agricultural to Non-Agricultural Land Use Change in Klaten Regency in 2013-2016. Jispo, 8(1), 113-140.

[14] Ricky, Rustiadi, E., & Barus, B. (2017). A projection of land needed for settlements and conversion of paddy fields in solok city. Journal of Regional and City Planning, 28(3), 186-203. https://doi.org/10.5614/jrcp.2017.28.3.3.

[15] Prabowo, R., Nur Bambang, A., Sudarno, & Rachmad Nurlette, A. (2020). Identification and conversion rate of rice field in Semarang year 2000-2019. E3S Web of Conferences, 202, 1-7. https://doi.org/10.1051/e3sconf/202020202002.

[16] Kovács, Z., Farkas, Z. J., Egedy, T., Kondor, A. C., Szabó, B., Lennert, J., Baka, D., & Kohán, B. (2019). Urban sprawl and land conversion in post-socialist cities: The case of etropolitan Budapest.Cities, 92 (July 2018), 71-81. https://doi.org/10.1016/j.cities.2019.03.018

[17] Umanailo, M. C. B. (2019). Land Conversion in Namlea District. SSRN Electronic Journal. https://doi.org/10.2139/ssrn.3461845.

[18] Sriyono. (2015). The effect of education level and community understanding of education on public health. journal Faktor Exacta, 8(1), 79-91

[19] Mantra, I.B. 2004. Demografi Umum Edisi Kedua. Yogyakarta : Pustaka Belajar.

[20] Putra, A. W. S., & Podo, Y. (2017). Factors affecting the level of community knowledge in mitigating landslides. Urecol 6th, 305-314. http://journal.unimma.ac.id/index.php/urecol/article/view/1549.