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LAND USE ANALYSIS AND DIRECTION FOR LAND USE PLAN TO SUPPORT REGIONAL DEVELOPMENT OF SELUMA REGENCY, BENGKULU PROVINCE

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ABSTRACT
Regional inequality in Bengkulu Province is getting higher with regional expansion. This regional inequality is visible in Seluma Regency. Therefore, Seluma Regency must maximize its economic potential by optimizing the agricultural sector. This can be done by developing land-based areas through appropriate land use according to the potential of land for agriculture. The objectives of this research are 1) to analyze land use changes, 2) to analyze the suitability of land use to capability land for agricultural commodities, 3) to analyze the suitability of land use to the spatial patterns, and 4) to prepare land use plans to support regional development plans. This research uses quantitative data consisting of primary data and secondary data. The research was conducted using spatial analysis in Seluma Regency, Bengkulu Province. The research results show that 1) land use changes are dominated by an increase of rice fields, dry/wetland forests, and open land area, 2) suitability of land use to capability land for agricultural commodities is 39.77%, and 4.02% is still possible to adjust to capability land for agricultural commodities, 3) suitability of land use to the spatial pattern is 55.10% and 5.65% is still possible to be adjusted to spatial pattern (transition), and 4) land use plans to support regional development are directed as an agricultural area with an area of 45.11% of Seluma Regency total area.

Keywords: Agriculture, Optimization, Pattern, Suitability.

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INTRODUCTION

Land is a relatively fixed development resource, while its use is always changing according to the needs of regional development and the development of community economic activities (Utoyo, 2012). Regional expansion in Bengkulu Province has led to regional imbalances between coastal and non-coastal areas, as well as between regions in coastal areas and non-coastal areas. Seluma Regency, which is one of the coastal regencies resulting from the expansion of Bengkulu Province, needs to maximize its economic potential through optimizing the agricultural sector. This can be seen from the dominance of the agricultural sector in GRDP and the livelihoods of people who mostly work in the agricultural sector.

Considering that the agricultural sector is a land-based economic sector, Seluma Regency needs to optimize the agricultural sector through land use suitability in accordance with the potential of the land, especially for agriculture. This needs to be done to increase local revenue that can be used for poverty reduction programs and efforts to increase the HDI value in Seluma Regency, which in turn contributes to reducing district/city regional inequality that occurs in Bengkulu Province. In addition, optimizing the agricultural sector through the suitability of land use in accordance with the potential of the land, especially for agriculture, is also expected to reduce the conversion of

agricultural land in Seluma Regency and is in line with the mandate of legislation in the protection of sustainable agricultural land.

Optimizing the agricultural sector needs to be done considering the limited development of areas in the east and west of Seluma Regency. This can be seen from the geographical conditions in the form of hillside mountains with forest areas covering 36.47% of the area of Seluma Regency in the eastern region and in the western region limited by a coastline that stretches from north to south parallel to the Indian Ocean along about 71 km which has the potential to be prone to high disasters. The limitations of regional development have caused 2 (two) sub-districts to be classified as underdeveloped, namely Kecamatan Ulu Talo and Kecamatan Seluma Utara, which are located in hilly and mountainous areas in the eastern region.

Regional inequality in Bengkulu Province is getting higher with the region's expansion (Arianti & Cahyadinata, 2016); (Putri & Almahmudi, 2020); (Febriani & Yusnida, 2020); (Ridwan et al., 2022) both between coastal and non-coastal areas, as well as between regions in coastal areas and non-coastal areas (Windirah et al., 2020). This can be seen in Seluma Regency, one of the coastal regencies resulting from the expansion of South Bengkulu Regency. BPS data shows that Seluma Regency in the last five years (2018-2022) has the highest percentage of poor people, and in the last ten years (2013-2022) has the lowest HDI value in Bengkulu Province. Seluma Regency also has a low financial ratio (Abdullah & Mardatillah, 2017); (Efriyanto et al., 2023). So, it is not surprising that in the ranking of the Village Development Index in 2023 issued by the Ministry of Villages, Development of Disadvantaged Regions, and Transmigration, there are 3 (three) sub-districts in the underdeveloped category. Therefore, to reduce regional inequality, Seluma Regency must maximize its economic potential by optimizing the agricultural sector (Tatiana et al., 2015); (Hernadianto et al., 2016); (Pratama et al., 2017); (Pasaribu et al., 2020) because it can absorb 66% of the workforce and has the most significant contribution to GRDP, which is 47% even though the percentage of contribution each year is decreasing. This can be done with land-based regional development through land use suitability based on the potential of the land for agriculture.

The objectives of the study were (1) to analyze land use changes in 2017-2023, (2) to analyze land use suitability with land potential for agricultural commodities, (3) to analyze land use suitability with spatial patterns of regional spatial plans, and (4) to develop land use plans to support regional development plans.

METHOD

The research was conducted in Seluma Regency, Bengkulu Province, which consists of 14 sub-districts. Geographically, Seluma Regency is located on the West Coast of Southern Sumatra at the coordinates 03049'55.66 "LS—04021'40.22 "LS and 1010 17'27.67''East-102059'40.54''East. The research was carried out over nine (nine) months, from October 2023 to June 2024.

This research uses quantitative data, which consists of primary and secondary data. The primary data used is land use data in 2023 generated from the interpretation of Landsat 8 satellite imagery and continued with field checks. The secondary data used is sourced from LAPAN/BRIN, BIG, USGS, the Ministry of Agriculture, KLHK, the Ministry of ATR/BPN, the Ministry of PUPR, BPS, and the Seluma District Government.

The research materials used were statistical and spatial data. Statistical data is sourced from BPS, while spatial data is sourced from LAPAN/BRIN, BIG, Seluma Regency Local Government, USGS,

Ministry of Agriculture, KLHK, Ministry of ATR/BPN, and Ministry of PUPR. The tools used were a set of computers equipped with ArcGIS, Microsoft Office, and Microsoft Excel software.

The data collection technique for secondary data was through agency visits. In contrast, the 2023 Landsat 8 Satellite Image data was obtained through data acquisition from USGS. The data analysis technique used was spatial analysis (cropping, raster, and overlay). The data analysis techniques and expected outputs for each research objective can be seen in Table 1. The land use used consists of 8 (eight) types: rice fields, plantations and mixed crops, dry/wetland forests, shrubs, savanna, open land, built-up land, and waters. The 2017 land use map is generated from the 2017 land cover map, which has been adjusted to the administrative boundary map and reclassified by SNI 7645: 2010. The 2023 land use map is generated from image interpretation using the supervised classification method with 200 samples/traits of land use classes based on 2017 land use and on-screen digitization of the Landsat 8 satellite image results.

Table 1. Data Analysis Techniques and Expected Outputs for Each Research Objective

No.	Research Objectives	Data Type	Data Source	Engineering Data Analysis	Expected Output
1	Analyzing land use change in 2017-2023	• Administrative Boundary Map scale 1:50,000 • Land Cover Map 2017 scale 1:50,000 • Map of Forest Area Confirmation Progress until 2020 • Map of Forest Area Designation Change to Non-Forest Area in 2023 • LSD map • Map of LP2B Perda No. 4 Year 2023 on LP2B Protection • Landsat 8 Satellite Imagery in 2023	• BIG and Governance Section • BIG and PUPR Office • MOEF • Ministry of ATR/BPN and PUPR Office • Agriculture Department • *USGS*	Spatial analysis (*cropping, raster,* and *overlay*)	• Land use map 2017 • Land use map of 2023 • Land use change map 2017-2023
2	Analyzing the suitability of land use with the potential of land for agricultural commodities	• Usage map for 2023 at scale 1:50,000 • Land suitability map of agricultural commodities in 2017 scale 1:50.000	• Output Objective 1 • Soil Research Center, BPPSLP, Ministry of Agriculture	Spatial analysis (*overlay*)	Map of land use suitability with potential land for agricultural commodities

No.	Research Objectives	Data Type	Data Source	Engineering Data Analysis	Expected Output
3	Analyzing the suitability of land use with the spatial pattern of the spatial plan regional space	• Land use map 2023 scale 1:50,000 • Spatial pattern map Perda No. 2 of 2013 concerning RTRW Seluma Regency 2012-2032	• Output Objective 1 • PUPR Office	Spatial analysis (*overlay*)	Map of land use conformity with the spatial pattern of the regional spatial plan
4	Develop a land use plan to support the plan regional development	• Land use change map 2017-2023 • Map of land use suitability with land potential for agricultural commodities • Map of land use conformity with the spatial pattern of spatial plan regional space	• Output Objective 1 • Output Objective 2 • Output Objective 3	Spatial analysis (*overlay*)	Up-to-date land use plan directions to support regional development plans

Image interpretation results were validated through overlaying forest area maps, LSD maps, KP2B maps, and field checks. Field checks were conducted on 270 randomly selected observation locations, with the primary consideration being ease of accessibility. The contingency matrix accuracy test results show 81.48%, which means that the satellite image interpretation results are still quite good. The map of potential land use for agricultural commodities is prioritized on commodities with the highest productivity and the most optimal land potential, then simplified into 4 (four) classes, namely highly suitable land (0 Ha), moderately suitable land (6,638.29 Ha or 2.73%), marginally suitable land (138,588.06 Ha or 56.93%), and unsuitable land (98,204.01 Ha or 40.34%). Crops are grouped into 3 (three) categories, namely food crops (irrigated rice paddy-T1, rainfed rice paddy-T2, upland rice-T3, and tidal rice paddy-T4), horticulture (shallots-H1 and red chili-H2), and plantations (cocoa-P1 and oil palm-P2). The spatial pattern has been adjusted to the administrative boundary map and reclassified by Permen ATR/Head of BPN No. 14 of 2021.

RESULTS AND DISCUSSION

Analysis of Land Use Change 2017-2023

Land use in 2017 was dominated by plantations and mixed crops covering 114,059.35 Ha (46.86%), dry/wetland forests covering 90,645.84 Ha (37.06%), and shrubs covering 28,895.18 Ha (11.87%). Land use in 2023 was dominated by dry/wetland forest covering 96,087.55 Ha (39.47%), plantations and mixed crops covering 93,736.51 Ha (38.51%), and rice fields covering 19,975.36 Ha (8.21%). 2023, there was also undefined land use due to cloud cover and cloud shadows of 6.62%.

Paddy fields, dry/wetland forests, and open land dominate land use change in Seluma Regency in 2017-2023. The increase in paddy fields of 11,003.25 Ha (4.52%) is dominated by changes in plantations and mixed crops, shrubs, and savanna into paddy fields. In comparison, the increase in open land of 454.12 Ha (0.19%) is dominated by changes in plantations and mixed crops and shrubs

into open land. Changes in dry/wetland forests occur because of a new forest area designation that causes changes in the function of forest areas. The changes occurred because some nature reserves turned into nature tourism parks, while some limited production forest areas turned into protected forest areas, hunting park areas, and permanent production forest areas. These land use changes indicate that Seluma Regency is still a rural area because the land use changes are still within the scope of the primary sector.

Other land use changes are forest land use changing to plantations and mixed crops, shrubs, and savanna. Based on the latest forest area designation, land use that was previously a forest area is not a forest area, identified as rice fields, plantations and mixed crops, shrubs, savanna, and built-up land. The issuance of the local regulation on the protection of sustainable food agricultural land has led to land uses previously identified as plantations and mixed crops, shrubs, and savannas designated as paddy fields.

Other land use changes identified are due to differences in the data sources' accuracy. Land use 2017 used SPOT 6 satellite imagery (resolution up to 1.5m for panchromatic and 6m for multispectral), while land use in 2023 used Landsat 8 satellite imagery (30m spatial resolution). In addition, there are differences in the satellite image interpretation methods used, namely land use in 2017 using on-screen digitation (vector), while land use in 2023 uses software assistance through the supervised classification method (pixels), causing differences in the accuracy of the resulting land use. Land use changes in Seluma Regency in 2017-2023 can be seen in Table 2.

Analysis of Land Use Suitability with Land Potential for Agricultural Commodities

The land use, as measured by its potential for agricultural commodities, is 96,806.03 Ha (39.77%), consisting of 15,247.28 Ha (6.26%) of paddy fields and 81558.75 Ha (33.50%) of plantations and mixed crops.

Table 2. Seluma Regency Land Use Change Matrix 2017-2023

	Land Use in 2017										
Land Use in 2023	Ricefield	Plantation and Mixed Plants	Dry/Wetland Forest Nature preserve	Limited production forest	Forest	Shrubs	Savannah	Open field	Built Up Land	Waters	Amount
Ricefield	5.29%	5.20%	0.00%	0.01%	0.02%	0.96%	0.11%	0.01%	0.54%	0.16%	8.21%
Plantation and Mixed Crops	0.14%	50.37%	0.00%	0.01%	0.18%	6.72%	0.75%	0.01%	0.18%	0.05%	58.51%
Protected Forest Area	0.00%	0.00%	0.00%	19.23%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	19.23%
Nature preserve	0.00%	0.00%	0.23%	0.00%	0.00%	0.03%	0.00%	0.00%	0.00%	0.01%	0.32%
Nature Tourism Park	0.00%	0.01%	0.04%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.01%	0.06%
Buru Land Park Area Forest	0.00%	0.00%	0.00%	2.16%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	2.21%
Dry/Wet Forest Areas Permanent Production	0.00%	0.00%	0.00%	8.17%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	8.17%
Limited Production Forest Area	0.00%	0.02%	0.00%	6.36%	0.00%	0.01%	0.01%	0.00%	0.00%	0.01%	6.44%
Forest	0.00%	1.92%	0.00%	0.00%	0.10%	1.24%	0.16%	0.00%	0.01%	0.00%	3.03%
Shrubs	0.08%	1.69%	0.00%	0.02%	0.06%	1.24%	0.58%	0.00%	0.06%	0.02%	3.73%
Savannah	0.01%	0.47%	0.00%	0.01%	0.05%	0.70%	0.31%	0.00%	0.00%	0.00%	1.55%
Open field	0.00%	0.11%	0.00%	0.00%	0.00%	0.03%	0.00%	0.01%	0.02%	0.05%	0.22%
Built Up Land	0.02%	0.44%	0.00%	0.02%	0.01%	0.18%	0.02%	0.01%	0.54%	0.03%	1.27%
Waters	0.01%	0.17%	0.00%	0.00%	0.00%	0.03%	0.01%	0.00%	0.02%	0.17%	0.42%
Undefined	0.08%	5.11%	0.00%	0.01%	0.47%	0.82%	0.09%	0.00%	0.07%	0.02%	6.62%
Amount	5.68%	65.17%	0.27%	36.08%	0.91%	11.87%	2.00%	0.04%	1.45%	0.53%	100.00%

Description: Forest1 is part of the dry/wetland forest classification without forest area function designation.

Rice field land use that by its land potential consists of moderately suitable land (S2) of 704.26 Ha (0.29%) and marginally suitable land (S3) of 1,214.26 Ha (5.97%), while plantation and food crop land use consists of moderately suitable land (S2) of 2,833.95 Ha (1.16%) and marginally suitable land (S3) of 78,724.80 Ha (32.34%). Transitional land use or not yet suitable and still possible to be

adjusted to the potential of the land is 9,775.83 Ha (4.02%) consisting of dry/wetland forest (forest1), shrubs, savanna, and open land with the potential for moderately suitable land (S2) of 237.26 Ha (0.10%) and marginally suitable land of 9,530.49 Ha (3.92%). Land use suitability with land potential for agricultural commodities can be seen in Table 3.

Table 3. Land Use and Land Potential

Land Use in 2023	Land Potential for Agricultural Commodities							
	Moderately Suitable Land (S2)			Marginal Suitable Land (S3)			Unsuitable Land (N)	Total
	T1, T2, T3, and T4	H1 and H2	P1 and P2	T1, T2, T3, and T4	H1 and H2	P1 and P2		
Ricefield	0,29%	0,00%	0,41%	5,97%	0,00%	0,92%	0,62%	8,21%
Plantation and Mixed Crops	0,00%	0,00%	1,16%	0,00%	0,00%	32,34%	5,00%	38,51%
Dry/Wetland Forest: *(Protected Forest Areas, Nature Reserves, Nature Tourism Parks, Hunting Park Areas, Permanent Production Forest Areas, Dry/Wetland Forests. Limited Production Forest)*	0,15%	0,00%	0,03%	3,50%	0,00%	3,39%	31,94%	39,02%
Dry/Wetland *Forest ([1])*	0,00%	0,00%	0,01%	0,00%	0,00%	0,34%	0,11%	0,46%
Shrubs	0,00%	0,00%	0,06%	0,00%	0,00%	2,47%	1,19%	3,73%
Savvanah	0,00%	0,00%	0,00%	0,00%	0,00%	0,93%	0,63%	1,55%
Open Land	0,00%	0,00%	0,03%	0,00%	0,00%	0,18%	0,02%	0,22%
Built-up Land	0,03%	0,00%	0,05%	0,96%	0,00%	0,15%	0,09%	1,27%
Waters	0,04%	0,00%	0,01%	0,27%	0,00%	0,06%	0,04%	0,42%
Undefined (Clouds and Cloud Shadows)	0,01%	0,00%	0,44%	2,55%	0,00%	2,90%	0,71%	6,62%
Total	0,52%	0,00%	2,20%	13,26%	0,01%	43,67%	40,34%	100,00%

Land use that is not by land potential for agricultural commodities is 103,828.08 Ha (42.65%), consisting of land use categorized as non-agricultural activities covering 21,040.05 Ha (8.64%) and land use that has the land potential not suitable for agricultural commodities covering 82,788.03 Ha (34.01%). The land use that cannot be defined and analyzed is 16,114.59 Ha (6.62%).

Analysis of Land Use Conformity to the Spatial Pattern of the Tata Plan

Regional Space

Land use that is by the spatial pattern of the regional spatial plan is 134,127.77 Ha (55.10%), namely plantation land use and mixed crops covering 70,125.43 Ha (28.81%), protected forest area covering 45.532.33 Ha (18.70%), limited production forest area of 9,632.03 Ha (3.96%), hunting park of 4,716.11 Ha (1.94%), rice fields of 3,002.41 Ha (1.23%), a nature reserve of 200.32 Ha (0.08%), built-up land of 832.47 Ha (0.34%), and waters of 86.67 Ha (0.04%). Transitional land use is not yet suitable and still possible to be adjusted to the spatial pattern of 13,756.87 Ha (5.65%), namely land use of dry / wetland forest (forest1) covering 1,041.66 Ha (0.43%), shrubs covering 8.568.86 Ha (3.52%), savanna covering 3,670.49 Ha (1.51%), and open land covering 475.86 Ha (0.20%) located in the spatial pattern of coastal borders, river borders, horticultural areas, plantation areas, energy mining areas, and residential areas. Land use not by the spatial pattern is 77,477.94 Ha (31.83%), which can be classified as a moderate level of inconsistency (25%-50%) (Fahmi et al., 2016). Changes in forest area designation have dominated the land use changes, causing land use inconsistencies

with the spatial pattern of 56,329.91% (23.14%). Land use that cannot be defined and analyzed at this stage is 15,609.89 Ha (6.41%). Furthermore, there are also differences in administrative boundaries covering 2,457.90 Ha (1.01%). The suitability of land use with spatial patterns can be seen in Table 4.

Land Use in 2023

Table 4. Land Use and Spatial Pattern

Land Use in 2023	Space Pattern													
	Protected Area							Cultivation Area			TE	KP	Boundary Difference	Total
	BA	PTB	PS		KS		KHP	P						
		HL	SP	SS	KSA CA	TB	HPT	P-1	P-2	P-3				
ranslate	0,20%	0,00%	0,02%	0,24%	0,00%	0,00%	0,03%	1,23%	2,35%	2,42%	0,64%	1,01%	0,07%	8,21%
Agriculture and Mixed Crops	0,38%	0,00%	0,04%	0,03%	0,03%	0,00%	0,04%	2,73%	10,45%	18,36%	3,30%	2,37%	0,30%	38,51%
Dry/Wetland Forest														
Forest Area Protected	0,00%	18,70%	0,00%	0,00%	0,00%	0,18%	0,00%	0,00%	0,00%	0,03%	0,08%	0,00%	0,24%	19,23%
Nature Reserve	0,02%	0,00%	0,07%	0,02%	0,08%	0,00%	0,00%	0,02%	0,05%	0,07%	0,09%	0,02%	0,01%	0,45%
Forest Area Fixed Production	0,00%	8,10%	0,00%	0,00%	0,00%	0,00%	0,01%	0,00%	0,00%	0,00%	0,00%	0,00%	0,06%	8,17%
Buru Park Area	0,00%	0,00%	0,00%	0,00%	0,00%	1,94%	0,02%	0,00%	0,00%	0,21%	0,02%	0,00%	0,03%	2,21%
Nature Park	0,00%	0,00%	0,01%	0,00%	0,01%	0,00%	0,00%	0,02%	0,00%	0,00%	0,02%	0,00%	0,01%	0,06%
Forest	0,01%	0,00%	0,00%	0,01%	0,00%	0,00%	0,00%	0,02%	0,14%	0,22%	0,03%	0,03%	0,01%	0,46%
Shrubs	0,03%	0,00%	0,00%	0,04%	0,00%	0,00%	0,05%	0,09%	0,60%	1,67%	1,07%	0,14%	0,03%	3,73%
Sabana	0,00%	0,00%	0,00%	0,01%	0,00%	0,00%	0,02%	0,01%	0,23%	0,67%	0,55%	0,05%	0,01%	1,55%
Open Land	0,01%	0,00%	0,01%	0,01%	0,00%	0,00%	0,00%	0,01%	0,05%	0,07%	0,03%	0,02%	0,01%	0,22%
Built-up Land	0,03%	0,00%	0,01%	0,03%	0,00%	0,00%	0,02%	0,11%	0,33%	0,31%	0,09%	0,34%	0,01%	1,27%
Waters	0,04%	0,00%	0,01%	0,05%	0,00%	0,00%	0,00%	0,05%	0,10%	0,09%	0,04%	0,05%	0,01%	0,42%
Undefined	0,09%	0,00%	0,00%	0,11%	0,00%	0,00%	0,01%	0,35%	2,27%	2,87%	0,20%	0,51%	0,21%	6,62%
Total	0,81%	27,44%	0,17%	1,06%	0,13%	2,14%	4,15%	4,70%	17,11%	28,19%	8,44%	4,64%	1,01%	100,00%

Land Use Plan of Seluma Regency to Support the Plan

Regional Development

The land use plan of Seluma Regency is focused on optimizing agricultural areas that have been adjusted to the potential of the land for agricultural commodities, covering 109,805.54 Ha (45.11%). The other land use plans are designated as a forest area of 94,976.42 Ha (39.02%), a residential area of 21,507.86 Ha (8.84%), and a water body of 1,025.95 Ha (0.42%), which can be seen in Table 5. The forest area land use plan consists of nature reserves, nature tourism parks, hunting park areas, permanent production forest areas, limited production forest areas, and protected forest areas according to the latest forest area designation. Settlement and water areas follow the 2023 land use. Transitional land use (dry/wetland forest in the form of forest, shrubs, savanna, and open land) that does not have land potential for agricultural commodities is allocated to develop residential areas. The agricultural land use plan consists of a food crop area of 15,247.28 Ha (6.26%) and a horticultural area of 13.85 Ha (0.01%). It is dominated by a plantation area of 94,544.42 Ha (38.84%). Food crop areas are dominated by marginal suitable land potential of 14,543.02 Ha (5.97%). All horticultural areas have marginal suitable land potential. Plantation areas are dominated by a marginally suitable land potential of 90,484.03 Ha (37.17%). This land also has the potential for marginal suitable land for horticultural commodities. This shows that land users are given 4 (four) variations and commodity choices in maximizing land use.

Table 5. Land Use Plan of Seluma Regency

Land Use Plan	Area (Ha)	Percentage (%)
Water Body	1.025,95	0,42%
Forest Area	94.976,42	39,02%
Food Crop Area	109.805,54	6,26%
Moderately Suitable Land (Commodities T1, T2, T3, T4)	704,26	0,29%
Marginal Suitable Land (Commodities T1, T2, T3, T4)	14.543,02	5,97%
Horticultural Area	13,85	0,01%
Marginal Suitable Land (Commodity H1, H2)	13,85	0,01%
Plantation Area	94.544,42	38,84%
Moderately Suitable Land (Commodities H1, H2, P1, P2)	4.060,39	1,67%
Marginal Suitable Land (Commodities H1, H2, P1, P2)	90.484,03	37,17%
Residential Area	21.507,86	8,84%
Undefined	16.114,59	6,62%
Total	243.430,37	100,00%

Food crop areas and plantation areas in Seluma Regency are spread across all sub-districts, while horticultural areas are only located in 3 (three) sub-districts, namely Semidang Alas Sub-district covering an area of 7.79 Ha, Talo Kecil Sub-district covering an area of 6.03 Ha, and Ulu Talo Sub-district covering an area of 0.02 Ha. This is by the results of research (Yulihartika & Herfianti, 2021), which states the feasibility of chili farming in Ulu Talo Subdistrict, precisely in Hargo Binangun Village and Air Keruh Village, because it has the largest harvest area and chili production. Semidang Alas Maras sub-district has a food crop area of 2,409.19 Ha and is the sub-district with the largest food crop area, which is 15.80% of the total food crop area in Seluma Regency. The largest plantation area is in Sukaraja Sub-district, which is 15,880.77 Ha or 16.80% of the total plantation area in Seluma Regency. (Africa, 2023) explained that the suitability of paddy fields in South Seluma District consists of the S2 class with limiting factors of nutrient retention (pH) and available nutrients (P2O5) and the S3 class with limiting factors of nutrient retention (pH) and available nutrients (P2O5 and K2O). These results are also in line with this research, which shows that Seluma Selatan Sub-district has marginal suitable land (S2) for irrigated paddy rice (T1), rainfed paddy rice (T2), upland rice (T3), and tidal paddy rice (T4).

CONCLUSION

Land use change in Seluma Regency during the 2017-2023 period includes changes from plantations, mixed crops, shrubs, and savannah to rice fields. In addition, some nature reserves have been converted into nature tourism parks. In contrast, some limited-production forest areas have been converted into protected hunting parks and permanent production forest areas. Other changes include the conversion of plantations and mixed crops and shrubs to open land. Land use, by its land potential for agricultural commodities, reaches 39.77%, while those in transition or not yet suitable and can still be adjusted amount to 4.02%, unsuitable at 42.65%, and undefined at 6.62%.

Furthermore, land use by the spatial pattern is 55.10%, in transition or not yet suitable by 5.65%, not suitable by 31.83%, and undefined by 6.41%. There are differences in administrative boundaries by 1.01%. The land use plan to support regional development is directed at agricultural areas amounting to 45.11% of the total area of Seluma Regency, with agricultural areas dominated

by plantations and food crops spread across all sub-districts. In contrast, horticultural areas are only found in Semidang Alas District, Talo Kecil District, and Ulu Talo District.

REFERENCES

Abdullah, A., & Mardatillah, S. (2017). Kinerja Pemerintah Daerah Kabupaten/Kota Di Pulau Sumatera. *Jurnal Fairness*, *7*(3), 189–206.

Afrisa, H. (2023). Evaluasi Kesesuaian Lahan Sawah Berdasarkan Status Hara di Kecamatan Seluma Selatan Kabupaten Seluma. *Naturalis: Jurnal Penelitian Pengelolaan Sumber Daya Alam Dan Lingkungan*, *12*(1), 66–77.

Arianti, N. N., & Cahyadinata, I. (2016). Kajian Dampak Pemekaran Wilayah Terhadap Kesenjangan Ekonomi Antar Daerah Pesisir di Provinsi Bengkulu. *Jurnal AGRISEP: Kajian Masalah Sosial Ekonomi Pertanian Dan Agribisnis*, 27–36.

Efriyanto, R., Herawati, H., & Sari, N. Y. (2023). Analisis Kemandirian Keuangan Daerah dalam Pengelolaan Keuangan pada Pemerintah Provinsi Bengkulu. *Jurnal Manajemen Bisnis Dan Keuangan*, *4*(2), 121–133.

Fahmi, F., Sitorus, S. R. P., & Fauzi, A. (2016). Evaluasi pemanfaatan penggunaan lahan berbasis rencana pola ruang Kota Baubau, Provinsi Sulawesi Tenggara. *Tataloka*, *18*(1), 27–39.

Febriani, R. E., & Yusnida, Y. (2020). Kajian Kesejahteraan Di Provinsi Bengkulu: Sebuah Temuan Dari Analisis Jalur. *Convergence: The Journal of Economic Development*, *2*(1), 16–35.

Hernadianto, H., Thansi, T., & Erisman, A. (2016). Analisis Keunggulan Kompetitif Sektoral untuk Pengembangan Ekonomi Lokal Kabupaten Seluma. *Jurnal Bingkai Ekonomi (JBE)*, *1*(2), 69–83.

Pasaribu, E., Anitasari, M., Gunawan, R., Ekaputr, R. A., & Putri, N. T. (2020). Analisis Shift Share pada Transformasi Sektor Pertanian dalam Perekonomian Wilayah di Bengkulu. *Jurnal Ekonomi-Qu*, *10*(2), 129–144.

Pratama, A. R., Sukiyono, K., & Arianti, N. N. (2017). Analysis of Agricultural Leading Subsector District/Cities in Bengkulu Province. *Agric*, *29*(2), 121–136.

Putri, N. T., & Almahmudi, A. (2020). Analisis ketimpangan pembangunan di Provinsi Bengkulu (Telaah posisi 3 kabupaten induk). *Convergence: The Journal of Economic Development*, *2*(1), 70–90.

Ridwan, M., Yolanda, V., & Noviyarsah, W. (2022). Pusat Pertumbuhan Ekonomi dan Ketimpangan Ekonomi: Fenomena Kontradiktif di Kabupaten-Kabupaten Berbasis Pesisir. *Sumber*, *39*, 0–344.

Tatiana, Y., Firdaus, M., Siregar, H. J., & Hariyoga, H. (2015). Analisis Perwilayahan Pembangunan dan Iklim Investasi di Provinsi Bengkulu. *MIMBAR: Jurnal Sosial Dan Pembangunan*, *31*(2), 295–306.

Utoyo, S. (2012). Dinamika penggunaan lahan di wilayah perkotaan (Studi di Kota Bandar Lampung). *Prosiding Seminar Hasil Penelitian FISIP Unila*.

Windirah, N., Romdhon, M. M., & Utama, S. P. (2020). Economic Inequality in Coastal Area of Bengkulu Province. *Indonesian Journal of Agricultural Research*, *3*(3), 179–184.

Yulihartika, R. D., & Herfianti, M. (2021). Analisis Pendapatan Usahatani Cabai Keriting di Desa Hargo Binangun dan Desa Air Keruh Kabupaten Seluma. *Jurnal Ekonomi Pertanian Dan Agribisnis*, *5*(1), 88–97.