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EVALUATION OF LAND SUITABILITY AND FINANCIAL FEASIBILITY ANALYSIS FOR LAND USE PLANNING IN RIAU PROVINCE

(Casestudy: on Teluk Lanus Village and Penyengat Village, Sungai Apit District, Siak Regency, Riau Province)

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ABSTRACT: Land suitability evaluation and financial feasibility analysis are very important and necessary in land use planning, including which will develop plantation crops on peatlands. The purpose of these activities are to evaluate the suitability of the land and analyze the financial feasibility of agricultural commodities that will be developed namely coconut, sugar palm, areca nut, fragrant lemongrass and sugar cane. Land evaluation uses a survey method to collect data and information in the field and soil samples to be analyzed in the laboratory. Field data and the results of soil analysis obtained were analyzed using the Matching method (comparing the requirements for land use of commodities to be developed vs. Land quality). To facilitate reading the suitability of commodities to be developed, a land suitability map is made using Arc-GIS software. Financial feasibility analysis using investment valuation in financial aspects is assessed by the following criteria: Net Benefit Cost Ratio (BCR), Internal Rate of Return (IRR) and Net Present Value (NPV). The results showed that the commodities of sugar palm, coconut, areca nut, lemongrass, and sugarcane were in S_3 land suitability classes (according to marginal) with limiting factors for root media, nutrient retention, and nutrient availability. The area for the development of sugar palm and coconut is 1,952 ha or around 27.1% of the PT. Uniseraya land, while areca nut, lemongrass and sugar cane are 1,466 ha or around 20.4%. If the planting system is carried out in monoculture, the commodity that provides the greatest benefits is Aren, then followed by Serai Wangi, Sugar Cane, Coconut, and Areca Palm. If the most beneficial polyculture is planted, Aren + Serai Wangi polyculture; then followed by Coconut + Aren; Kelapa + Lemongrass + Coffee; and Pinang + Lemongrass fragrant.

Keywords: Land Suitability, Financial Feasibility, Land Planning, Peat Soil, Plantation Commodities

1. INTRODUCTION

Sago plantation fires cause significant losses to overcome, so it is necessary to look for profitable commodity alternatives. Coconut, palm sugar, areca nut, lemon grass and sugar cane that is considered to have promising development prospects because it has an extraordinary function as a raw material for the food, health, cosmetics and even coconut and palm sugar industries that can be used as raw materials for the biofuels industry [1][2][3].

In order for the land use to be more optimal, it is necessary to evaluate the land, namely land suitability evaluation and financial feasibility analysis [21][22][23]. This is intended to ensure the plantation commodities to be planted in accordance with the land agroecosystem and are financially viable so that it is profitable for the company [4][5][6].

Land suitability is the suitability of a land type for a particular use [1]. Land conditions between one region and another region are very different [24][25][6]. These differences affected on their potential for agriculture, both in the types of commodities developed and the management techniques needed [7][8][9].

In accordance with its genetic nature. Each commodity requires certain growth requirements because not all agricultural commodities are suitable to be developed for each type of land. Each type of plant to be able to grow and produce optimally requires certain growing requirements [10] [11]. In addition, in order to be able to grow and produce high quality produce, plants must be cultivated in an appropriate environment [12] [3] [14].

The financial feasibility analysis is carried out to provide a quantitative description related to the business plan doe to who will develop coconut inside, sugar palm, areca nut, lemon grass, and sugar cane. The financial aspects assessed include revenues and expenditures that occur in the development of these plant commodities for a certain period. Furthermore,

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financial analysis is continued by doing calculations related to investment criteria [6]. The research objective was to evaluate land suitability and financial feasibility of the commodities of coconut, palm sugar, areca nut, citronella and sugar cane which will be developed by PT. Uniseraya.

2. RESEARCH METHODS

The research was carried out on Teluk Lanus Village and Penyengat Village, Sungai Apit District, Siak Regency, Riau Province. The survey and secondary data collection and soil analysis activities were carried out in July-August 2018. Land suitability analysis and analysis of financial feasibility of coconut, palm, areca nut, lemongrass, and sugarcane farming were carried out in April 2019. The study used survey through interviews, secondary data collection, and taking several soil samples. Soil samples are analyzed in the Laboratory to determine the quality and characteristics of the land, among others: physical and chemical properties of the soil. The research activities were carried out through several stages, namely: 1) preparation 2) Analysis of land suitability for the commodities of coconut, palm sugar, areca nut, lemongrass, and sugarcane, and 3) analysis of financial feasibility of farming.

2.1. Preparation.

Preparations begin with coordination and discussion to determine the objectives of the land evaluation and analysis of financial feasibility, what data is needed, and assumptions used as a basis for assessment and planned activities to be carried out.

2.2. Analysis of land suitability for the commodities of coconut, palm sugar, areca nut, lemongrass, and sugarcane.

At this stage all data that has been collected includes the results of soil analysis, compiled according to needs based on the criteria used for the evaluation process, namely land characteristics (land characteristics) and land use requirements (land use requirement).

All data collected is tabulated, analyzed and interpreted based on the concept of land evaluation. The principle of the land suitability analysis is matching (matching process) between the characteristics of the land as a parameter with land use requirements that have been arranged based on land units to determine land suitability classes (appendix 1-5). The process of determining the land suitability class is based on limiting factors which refers to the minimum law, namely the land suitability class is determined by the smallest value. Land suitability assessment is carried out at the sub-class level based on the land suitability classification structure [15][16][17][27][28][29] namely: S1 (highly suitable); S2 (quite appropriate/moderately suitable); S3 (marginally suitable); and N (not suitable/not suitable). The results of the interpretation in the form of tabular data are then converted into spatial format using Geographic Information System (GIS) with the process of digitizing the map to present digital maps and products are land suitability maps for the commodities of coconut, sugar palm, areca nut, lemongrass, and sugar cane with scale of 1: 50,000. To facilitate analysis using Arc-GIS software. The quality/ characteristics of the land used in land evaluation are presented in Table 1.

Table 1. Determination of Quality and Characteristics of Land in Land Suitability Analysis.

No.	Land quality	Characteristics of land	Data source
1.	Temperature (tc)	Annual average temperature (°C)	Local climate station
2.	Availability of water (wa)	Rainfall (mm)	Secondary data (BPS)
		Air humidity (%)	Field observations
3.	Availability of oxygen (oa)	Drainage	Field observations
4.	Media roots (rc)	Effective depth (cm)	Field observations
		Peat maturity	Field observations
		Peat thickness (cm)	Field observations
5.	Nutrient retention (nr)	Soil CEC (cmol/kg)	Laboratory analysis
		Basic saturation (%)	Laboratory analysis
		soil pH	Laboratory analysis
		Organic C (%)	Laboratory analysis
6.	Nutrients available (na)	N total (%)	Laboratory analysis
		P_2O_5(mg100 g^{-1})	Laboratory analysis
		K_2O (mg100 g^{-1})	Laboratory analysis
7.	Toxicity (xc)	Salinity (mmhos cm^{-1})	Laboratory analysis
8.	Danger of sulfidic (xs)	Sulfidic depth (cm)	Field observations
9.	Danger of flooding/ inundation (fh)	Inundation (cm $bulan^{-1}$)	Field observations

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2.3. Farming financial feasibility analysis

Farming financial feasibility analysis is done by making farming simulations on certain commodities. The value of farming in the simulation is calculated based on market price assumptions for a certain period. These values are used as the basis of calculations related to the costs incurred in farming activities and the value of receipts obtained. The financial feasibility of farming is assessed by the following criteria: Net B/C Ratio, Internal Rate of Return (IRR) and Net Present Value (NPV).

Net B/C Ratio

According to Gray (1997), Benefit Cost Ratio (B/C Ratio) is an assessment carried out to see the level of efficiency of the use of costs in the form of a comparison of the number of positive net values with a negative net present value, or in other words Net B/C is the ratio between the positive NPV amount and the negative NPV number. The amount of benefits obtained by farmers in conducting their farming activities is chosen if they have a Net B/C Ratio value > 1. The formula used to obtain the Net B/C Ratio value is

$$\text{NET B/C} \quad \frac{\dfrac{n.\ Bt.\ CT}{..\ t..1\ldots1\ldots i..^{t}}}{\dfrac{n.\ Ct.\ Bt}{..\ t..1\ldots1\ldots i..^{t}}}$$

Information:
Bt = Benefit (gross receipt in year t)
Ct = Cost (gross cost in year t)
n = The economic age of farming
i = Current interest rate
The criteria that can be obtained from the results of the calculation of Net B / C Ratio are:
Net B/C > 1 = profitable farming.
Net B/C = 1 = Farming is not profitable and is not detrimental.
Net B/C < 1 = Farming is detrimental.

Internal Rate of Return (IRR)

IRR shows the ability of an investment or business to generate a return or a level of profit that can be used. The criteria used to show that a business is feasible is if the IRR value is greater than the interest rate that applies when the farm is cultivated. The IRR is formulated as follows:

$$\boldsymbol{IRR.i_1} \quad \frac{\boldsymbol{NPV_1}}{\boldsymbol{NPV_1 \quad . NPV_2}} \ \boldsymbol{x(i_2\ .\ i_1)}$$

Information:
NPV1 = NPV which is positive.
NPV2 = NPV which is negative.
i1 = interest rate when producing a positive NPV.
i2 = interest rate when generating a negative NPV.

Net Present Value (NPV)

Net Present Value is a method used to determine the ratio of present value of net cash inflows (Proceeds) to the present value of investment expenditure costs. If the positive NPV calculation results, the investment made will provide maximum results compared to the prevailing interest rates. Conversely, if the NPV value generated is negative then the investment made will yield a lower yield than the relevant interest rate. Mathematically, the NPV value can be written as follows:

$$NPV = \sum \frac{Bt - Ct}{(1+i)^{t}}$$

Information:
Bt = Benefits in years 1 to 5.
Ct = Costs in years 1 to 15.
n = 5 years.
i = Interest rate.
t = Starting in the 1st year.

3. RESULTS AND DISCUSSION

3.1. Characteristics of Research Sites

The reseach located was in Teluk Lanus Subdistrict, Siak Regency with coordinates 102º 29 '31.5 "-102º 44' 17.66" East Longitude and 0o41 '56.19 "-0º 44' 43.08" LU. The land area of 7.093.18 ha consists of 3 parts, namely: (1) Area 1 covering an area of 567.38 ha, (2) Area 2 covering an area of 4,196.30 ha, and (3) Area 3 covering an area of 2,329.50 ha.

Land use at the time of the survey was oil palm and sago plantations with an area of 326.31 ha and 2,000 ha respectively. Topography of flat land, with slopes between 0 to 3% and altitude between 2 to 13 m above sea level.

The climate in the survey area is classified in the Af climate group based on the Köppen-Geiger system. The average annual temperature in this region is 27.0 ° C. The average minimum temperature is 22.19º C with a temperature range of 21.8º C -22,6º C, while the maximum maximum temperature is 31,75º C with a range of 31,2º C-32,2º C.

The type of rainfall in this area includes the bi model where within a period of 1 year there are 2 peaks of the highest rainfall in April and November. In the dry season there is still considerable rainfall (> 100 mm / month), ie in April. The variation in the precipitation between the driest and wettest months is 187 mm. The average annual rainfall is 2,406 mm (Climate data org, 2018). This shows that the availability of water is enough to grow plants.

The type of soil is dominated by peat soil around 95% and peat mineral soil (Endoaquept) around 5%. Based on the level of peat depth, it is divided into 5 categories, namely: 0 = 50 cm which is peatland with a land area covering 540 ha; 50-100 cm (shallow peat) with a total area of 455 ha; depth of 100-200 cm (medium peat) covering an area of 470 ha; a depth of 200-300 cm which is included in the deep peat group with an area of 485 ha while the rest has a depth of more than 3 m (very deep peat) of 5,241 ha. Peat soils up to medium peatland with an area of 1,951 ha scattered along the banks of the river.

Based on the level of maturity / decomposition of organic matter, peat is divided into 3 types, namely sapris, half-cooked (hemis) and peat that has not been decomposed properly (fibris). The observations in the field, the level of maturity of the sapris peat are generally found at a depth of 0-30 cm in the flow area. Hemic peat is generally found at a depth of more than 30 cm in the flow area while in peat with a depth of more than 200 cm half-cooked peat (hemic) can be the topmost layer.

The depth of the water level varies according to the groundwater flow, which is an average of 40.82 cm with a depth variation between 0 and 130 cm. The presence of water on peatlands is strongly influenced by the presence of rain and tidal rivers. Field observations of groundwater level on PT Uniseraya land can be divided into 3 typologies, namely: 0-25 cm water level covering an area of 1,412 hectares (19.6%); the water level of 25 - 40 cm is 542 ha (7.5%) and the rest is at 40-70 cm water level, which covers 5,238 ha (72.83%). Physical and chemical properties of soil have an important role for plant growth. Physical aspects are limited to soil color, maturity level and peat thickness, depth of groundwater, and soil maturity.

Based on data on soil properties and other land parameters such as physiography and topographic elements, both collected from secondary data and primary data are classified taxonomically to subgroup categories based on the Land Taxonomy System (Soil Survey Staff, 2010). From the results of the classification, a number of 2 (two) orders were differentiated into 4 suborder (soil collections), 4 great groups (soil types), and 8 subgroups (types of land). In detail as follows:

***Soil Subgroups of Order of Histosols, Suborder Fibrists, and Greatgroup of Haplofibrists*.**

Hemic Haplofibrists. namely peat soil which is dominated by fibric material (crude fiber> 75%) and has one or more layers of hemic material with a total thickness of 25 cm or more in the control cross section. This peat has a thickness of more than 150 cm. Based on the results of the land survey this type has the smallest percentage of area or 1.4% of the total study area.

***Land Subgroups of Order Histosols, Suborder Hemists, and Greatgroup Haplohemists*.**

Fibric Haplohemists. namely peat soil which is dominated by hemic material (crude fiber 15-75%) and has one or more layers of fibric material with a total thickness of 25 cm or more in the control cross section. This peat has a thickness of more than 150 cm. Based on the results of this type of land survey, the area has a third percentage or 12.1% of the total study area.

Terric Haplohemist. That is peat soil which has a degree of weathering of hemic organic matter (crude fiber 15-75). This peat has a thickness of less than 150 cm. Based on the results of the land survey, this type has an area percentage of 4.1% of the total study area.

Typic Haplohemists. namely peat soil which is dominated by hemic material (crude fiber 15 -75%). This peat has a thickness of more than 150 cm. Based on the results of the land survey this type has a percentage of area of 5.8% of the total study area.

Soil Subgroups of Order of Histosols, Suborder Saprists, and Greatgroup of Haplosaprists

Hemic Haplosaprists. namely peat soil which is dominated by sapric (crude fiber <15%) and has one or more layers of hemic material with a total thickness of 25 cm or more in the control cross section. This peat has a thickness of more than 150 cm. Based on the results of the survey, this type of land was the most dominant found in the study location, which was 51.9% of the total study area.

Terric Haplosaprists. namely peat soil which has a weathering rate of sapric organic matter (crude fiber <15%). This peat has a thickness of less than 150 cm. Based on the results of the land survey, this type has an area percentage of 4.9% of the total study area.

Typic Haplosaprists. namely peat soil dominated by sapric (crude fiber <15%). This peat has a thickness of more than 150 cm. Based on the results of the land survey this type has a percentage of area of 14.8% of the total study area.

Soil subgroups of Order Inceptisol, Suborder Aquept, and Endoaquepts Greatgroup

Typic Endoaquepts. The Typic Endoaquept Soil Subgroup is a newly developed soil that is shown by clay washing characteristics from the upper layer to the lower layer at the initial level which forms a characteristic horizon called kambik and develops or undergoes a pedogenesis process in a blocked drainage state. This land does not show important features related to the depth of the solum, the content of organic matter, cambisol is a soil that has a cambic B horizon, or A umbrik

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horizon or A molic horizon, without showing hydromorphic symptoms in a 50 cm cross section of the surface.

3.2. Map of the Land Unit

Based on the interaction of the elements of the land characteristics which consist of: soil type, peat depth, groundwater depth, research location grouped into 28 Soil Map Units (SPT) as shown in Figure 1.

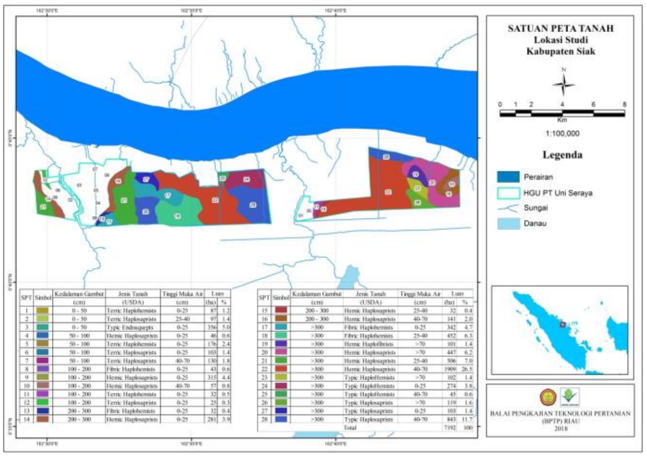

Figure 1. Unit Map of PT Uniseraya Land.

3.3. Land Suitability

Land Suitability for Coconut Plants

The evaluation results showed that the suitability of land [18][19][20] for the development of coconut plants consisted of: a suitable marginal class (S3) covering an area of 1,952 ha and an incompatible area of 5,240 ha. Based on the factors of hacking, S3 classes are divided into 3 groups, namely: (1) S3 class which is limited by limiting factors only nutrient retention (nr) covering 998 ha; (2) S3 class which is limited by nutrient retention (nr) and available nutrient (na) factors covering 469 ha; and (3) S3 class with root media (rc) and nutrient retention (nr) limiting factors of 485 ha. Inappropriate land (N), the limiting factor is root media (rc). The coconut land suitability map can be seen in Figure 2.

Land Suitability for Palm Plants

Land suitability class for Aren commodity development, around 1,952 ha classified as marginal class (S3). Based on the limiting factors, S3 land suitability is divided into 3 groups, namely: (1) S3 class which is limited by limiting factors only nutrient retention (nr) covering an area of 1,052 ha; (2) S3 class which is limited by nutrient retention (nr) and available nutrient (na) factors covering 414 ha; and (3) S3 class with root media (rc) and nutrient retention (nr) limiting factors of 485 ha. Other land has an inappropriate land suitability class (N) with a rooted media (rc) limiting factor of 5,240 ha. The land suitability map for sugar palm can be seen in Figure 3.

Land Suitability for Areca Plants

The evaluation results showed that the land suitability class for areca nut commodities consisted of 2 classes, namely according to marginal (S3) area of 1,466 ha and not suitable (N) covering an area of 5,726 ha. S3 suitability classes are divided into two groups, namely: (1) S3 land suitability class which is limited by limiting factors only nutrient retention (nr) covering an area of 1,052 ha; and (2) S3 land suitability class which is limited by root restriction (rc) and nutrient retention (nr) media area of 414 ha. The inappropriate limiting factor is root media (rc). The land suitability map for areca nut can be seen in Figure 4.

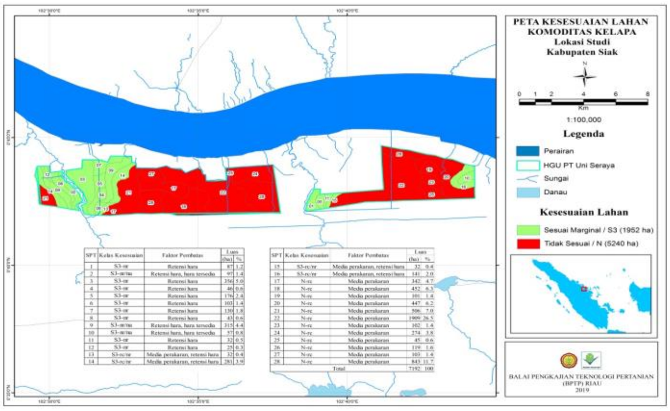

Figure 2 Land Suitability for Coconut

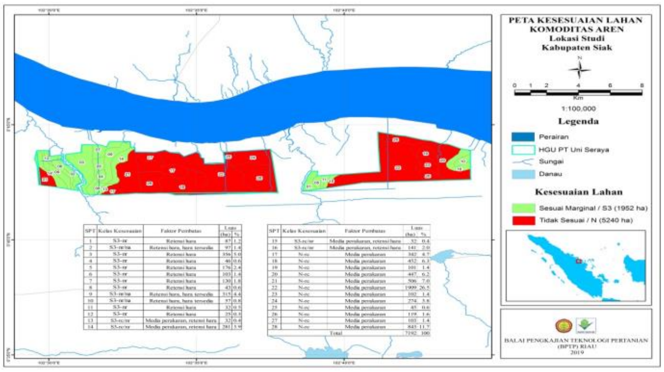

Figure 3 Land Suitability for Sugar Palm

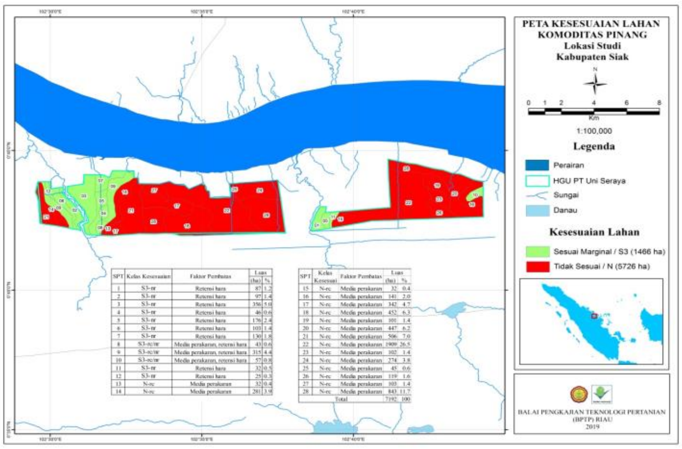

Figure 4 Land Suitability for Areca Nut

Land suitability for* Lemongrass *plants

The evaluation results showed that land suitability for lemongrass fragrance commodities consisted of 2 classes, namely according to marginal (S3) covering an area of 1,466 ha and incompatible (N) covering an area of 5,726 ha. Based on the limiting factors, S3 suitability classes are divided into four groups, namely: (1) S3 land suitability class with a nutrient retention limiting factor (nr) of 898 ha; (2) S3 land suitability class with limiting nutrient retention factor (nr) and available nutrient (na) covering an area of 97 ha; (3) S3 land suitability class with root media (rc) and nutrient retention (nr) limiting factors of 100 ha; and (4) S3 suitability class with limiting media root factor (rc), nutrient retention (nr), and nutrient availability (na) covering 371 ha. The inappropriate limiting factor is root media (rc). The

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land suitability map for areca nut can be seen in Figure 5.

Land Suitability for Sugar Cane Plants

The evaluation results showed that land suitability for Sugarcane commodities consisted of 2 classes, namely according to marginal (S3) covering an area of 1,466 ha and incompatible (N) covering an area of 5,726 ha. Based on the limiting factors, S3 suitability classes are divided into four groups, namely: (1) S3 land suitability class with a nutrient retention limiting factor (nr) of 898 ha; (2) S3 land suitability class with limiting nutrient retention factor (nr) and available nutrient (na) covering an area of 97 ha; (3) S3 land suitability class with root media (rc) and nutrient retention (nr) limiting factors of 100 ha; and (4) suitability of S3 with limiting factors for root media (rc), nutrient retention (nr), and nutrient availability (na) of 371 ha. The inappropriate limiting factor is root media (rc). The land suitability map for areca nut can be seen in Figure 6.

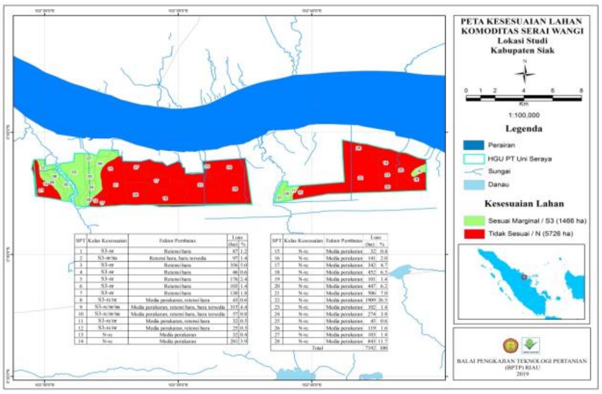

Figure 5 Land Suitability for Lemongrass Fragrant

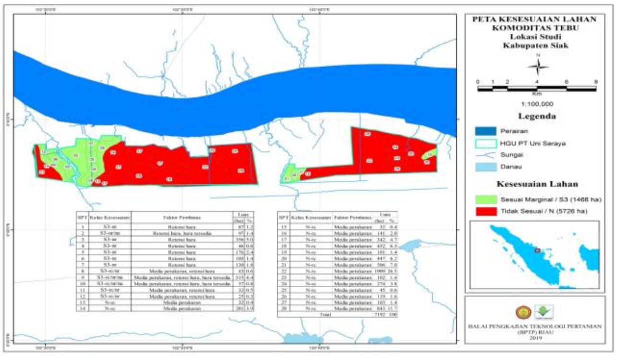

Figure 6 Land Suitability for Sugar Cane Fields

3.4. Financial Feasibility of Coconut Monoculture, Aren, Areca Palm, Lemongrass, and Sugar Cane Farming

The results of the analysis of the financial feasibility of farming of coconut, palm, areca nut, lemongrass and sugarcane, cultivated in monoculture show that all commodities are feasible and profitable. However, the crop commodities that provide high income are Aren and Serai Wangi monocultures with BC ratios of 205.91 and 95.36 (Table 2). Even though financially all commodities are feasible to be developed, the results of land suitability evaluation are classified as the corresponding magrinal (S3) class with various limiting factors. This means that if the planting is done in monoculture it will be at risk, so it is recommended to plant polyculture (Figure 7-10). Polyculture planting has several advantages, namely the efficiency of land use and the acquisition of diverse crops, so that it can increase income besides the polyculture planting pattern is one of the efforts to reduce the population explosion of plant pest organisms. Plants that are diverse in one land make pests and diseases not focus on one commodity, consequently, the pest organisms will be easily controlled and not subject to explosions and with Polyculture it is often able to increase soil fertility naturally thereby increasing the yield of its main commodities. To ensure which plant combination can be recommended, an analysis of financial feasibility is needed.

Table 2. Financial Feasibility of Coconut Farms, Palm Sugar, Areca Palm, Lemon Grass and Sugar Cane.

No	Investation criteria	Coconut	Palm Sugar	Areca	Lemon Grass	Sugar Cane
1.	NPV (Rp)	217.298.940	5.418.872.220	30.508.333	1.294.077.712	440.100.180
2.	Net B/C	10.45	205.91	1.71	95.36	27.74
3.	IRR (%)	39	93	11	757	222
4.	PP (Thn)	0.46	0.02	4.77	0.09	0.25

Information: Decent Indicator: NPV (Rp) > 0; Net B/C > 1; IRR (%) > DR; PP(thn) < Umur Bisnis

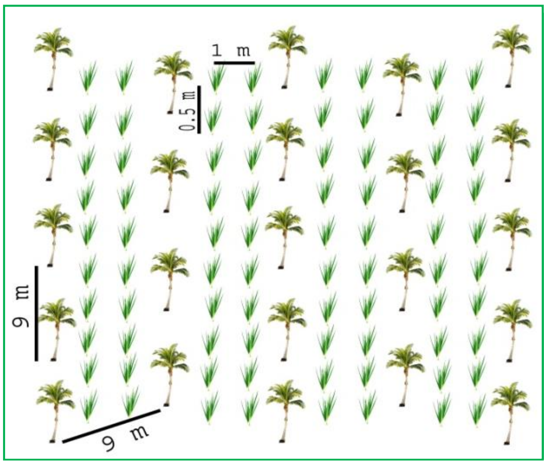

Figure 7. Coconut Polyculture with Lemongrass Fragrant

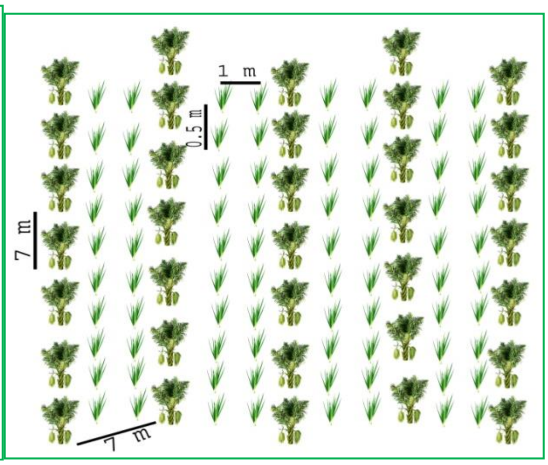

Figure 8. Polyculture of Palm Sugar with Fragrant Lemongrass

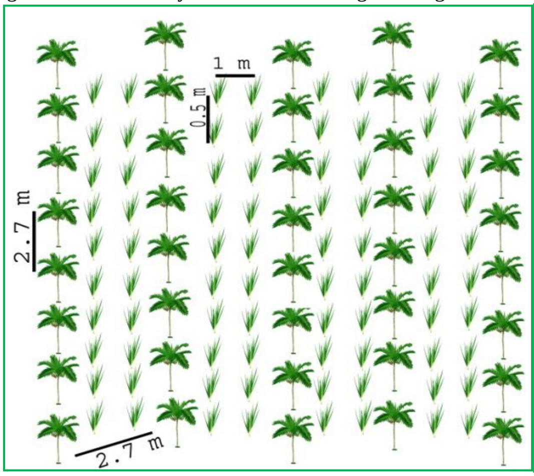

Fig.9. Areca Palm Polyculture with Fragrant Lemongrass

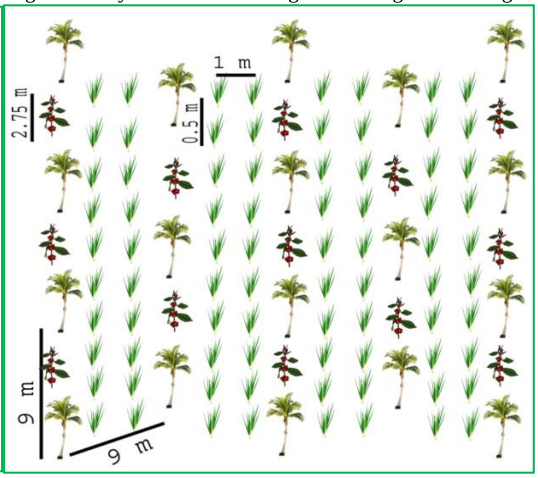

Fig.10. Coconut Polyculture with Fragrant Femongrass and Coffee

3.5. Financial Feasibility of Coconut Polyculture, Palmsugar, areca, lemongrass, and Sugar Cane Farming

The results of the financial feasibility analysis of four patterns of polyculture farming, namely: (1) coconut plant polyculture + lemongrass + coffee; (2) polyculture of palm + areca palm plants; (3) polyculture of fragrant areca + lemon grass; and (4) coconut and palm sugar polyculture, indicating that all combinations are financially feasible and profitable. However, the most advantageous combination of polyculture sugar palm + lemongrass with NPV value reaches IDR 5,716,453,836 and B/C amounting to 249.07 (Table 3). Other beneficial polyculture combinations are coconut + palm sugar with an NPV value of IDR 3,182,771,283 and B/C of 147.36.

Table 3. Financial Feasibility of Coconut Farms, Palm Sugar, Areca Palm, Lemon Grass and Sugar Cane.

No	Investasi criteria	coconut+lemon grass+coffei	Palmsugar+ lemongrass	areca+lemon grass	cocout+palm sugar
1.	NPV (Rp)	575.312 101	5.716.453.836	241.725.049	3 182 771 283
2.	Net B/C	33.24	249.07	8.37	147.36
3.	IRR (%)	479	378	166	85
4.	PP (Thn)	0.28	0.02	1.68	0.04

Information: Decent Indicator: NPV (IDR) > 0; Net B/C > 1; IRR (%) > DR; PP(thn) < Umur Bisnis

4. CONCLUSION

The research location is land compatibility has S3 suitability classes (according to marginal) for the development of coconut, palm sugar, areca nut, lemongrass, and sugar cane commodities. Thus, if it is to be developed and so the results are optimal, efforts must be made to overcome some of the limiting factors for each crop commodity, including: root media, nutrient retention, and nutrient availability. To overcome the limiting factors of nutrient retention and nutrient availability can be done by adding lime / amelioration and nutrient production inputs P and K while overcoming the limiting factors of drainage and water retention can be done with water system network engineering.

The area for the development of sugar palm and coconut is 1,952 ha or around 27.1% of the land, while areca nut, lemongrass and sugar cane are an area of 1,466 ha or around 20.4%. If the planting system is carried out in monoculture, the commodity that provides the greatest benefit is Aren with a Net B/C value (205.91), followed by fragrant lemongrass, sugar cane, coconut, and areca nut with a Net B/C value of 95 , 36; 27,74; 20.76; and 10.45. If the most beneficial polyculture is planted, Aren + Serai Wangi polyculture; then followed by Coconut+Aren; Kelapa+ Lemongrass+Coffee; and Pinang+Lemongrass fragrant.

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