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Spatial mapping of land potential and productivity of the popular kasturi type of tobacco

L. Sukardi[1], Tajidan Tajidan[2*], Fahrudin[3]

[1] Lecture in the Agribusiness Studies Program, Faculty of Agriculture, University of Mataram, Mataram, Indonesia

[2] Lecture Master's Program in Agribusiness Studies, Faculty of Agriculture, University of Mataram, Mataram, Indonesia

[3] Lecture Soil Science Study Program, Faculty of Agriculture, University of Mataram, Mataram, Indonesia

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Abstract: **The aim of this study was to obtain a spatial map of the land potential and productivity of Kasturi-type tobacco in West Lombok Regency, Indonesia. To achieve the objectives of the research, it was carried out by applying a combination of survey, observation, and interview methods. Surveys to obtain data on the physical, chemical, and biological properties of the soil, then analysis was carried out in the edaphology laboratory. Observations to obtain agro-climatological data and interviews to obtain data on labor requirements. The collected primary and secondary data were compared to tobacco plant growth and development conditions overlaid on the GPS map to produce a spatial map of tobacco plant suitability and potential productivity. The suitability of land for the development of tobacco plants is distributed in six districts, namely Kediri District, Labuapi District, Kuripan District, Gerung District, Lembar District, and Sekotong District with a potential area of 12,174.5 ha, while the actual area is 553.5 ha. The productivity of tobacco cultivation is from 870 kg/ha to 1,386 kg/ha and the minimum production potential is 12,191.794 tons/year.**

Keywords: **cultivation, development, distributed, soil, suitability.**

I. INTRODUCTION

The potential of the land in the agricultural sector is determined by the biophysical conditions of the land. The biophysical conditions of the land include climate, soil characteristics, topography, hydrology, and vegetation. Biophysical conditions determine the land's ability to grow plants and animals as an indicator of land fertility (Banua, et al, 2007).

Accuracy in land use (land use) determines the success of the agricultural business. Land use based on land capacity will increase land productivity and ensure the development of a sustainable environment (Hantarto, et al., 2017; Sartohadi, et al, 2008). Conversely, land use that is not in accordance with its potential will have a negative impact on land productivity and the environment, i.e. land degradation will occur, eventually reducing the quality of land. land and reduce productivity. In an effort to prevent land degradation, it is necessary to assess land use in an effort to support development planning and sustainable agricultural development (Rossiter, 1994).

As part of the efforts to develop and develop agriculture, it is necessary to carry out an inventory of the potential and suitability of the land (Suhesti, et al., 2017). Inventory of land potential and suitability in relation to future agricultural development efforts, as well as a projection of prospects for the development of agricultural crop commodities (Ramadhon and Sucipto, 2010), including tobacco crop commodities.

Land suitability is the process of assessing the suitability (adaptability) of land for a given type of land use (plant type and management level) (Widiatmaka and Hardjowigeno, 2007). According to FAO (1976), land evaluation is an evaluation of the performance of land when it is used for a particular purpose. The evaluation of the performance of land is based on the interpretation of the area of the land, the topography of the land, the quality of the land, the vegetation, the climate, the irrigation infrastructure, and other aspects.

Tobacco plants are one of the main plantation products in Karo Regency, North Sumatra, and in Buleleng Regency, Bali Province (Bangun, 2020; Helmi, et al, 2021; Siregar, 2016) and also in West Province. Nusa Tenggara (NTB), especially on the island of Lombok. One type of tobacco that is being developed in West Lombok Regency, West Nusa Tenggara Province, is popular tobacco (Sukardi, et al., 2023). The popular type of tobacco grown is the chopped kasturi type. Rajang kasturi type of tobacco has a market share at home and abroad. Almost all cigarette factories in Java use Rajang Kasturi tobacco as a raw material for cigarettes, which helps support the local, regional, and national economy (Rachmat and Abdillah, 2019). Kasturi-type Rajang tobacco also has a share of the export market, thus contributing to the country's foreign exchange (Sahri, et al., 2022; BPS, 2021).

The growth of tobacco plants is determined by genetic and environmental factors (Nurdin, et al, 2016; Triono, 2017). Genetic factors are the determinants of growth that come from the nature of the plant itself, while environmental factors are the determinants of the exterior of the plant. Conditions of environmental factors can change at any time (Cahyono 1998). The environmental factors that influence the growth and production of a plant, including tobacco, are climatic factors and soil factors. Climatic factors that have a significant effect on plant growth are rainfall, temperature, humidity, and wind speed. Influencing soil factors include the physical, chemical, and morphological properties of the soil at the tobacco-growing site (Hartana 1978; Triono, 2017).

Climatic conditions and soil type conditions in the mid-plains and lowlands have been used as locations for small-scale tobacco cultivation in West Nusa Tenggara Province, including West Lombok Regency (Sahri et al, 2022; Sukardi, et al, 2023) due to climate and soil types are believed to be in accordance with the requirements for growing tobacco plants. Agroclimatic conditions and soil fertility are similar to the requirements for the growth and development of tobacco plants and have attracted the interest of farmers and businessmen to invest in tobacco plantations (Akbar, 2016).

The land area for tobacco plants fluctuates from year to year but shows a decreasing trend (Septiani, et al., 2019). The area of tobacco plants has increased and decreased from year to year, with fluctuations varying between districts (Sukardi, et al., 2023). The results of the identification of tobacco development problems in West Lombok Regency are limited information on the level of fertility and carrying capacity of the land, the selection of planting areas that are not suitable (containing chlorine), limited information related to the cultivation of tobacco, especially for irrigation and fertilization, as well as the availability of human resources that have managerial capacity and skills in harvest and post-harvest management. Changes in the physical and chemical properties of the soil, variations in rainfall, temperature, humidity, and wind speed, or climate change have an impact on the characteristics and quality of the land. (Basyaruddin 1998, Khusrizal 2004).

In an effort to support the development of small-scale tobacco agribusiness of the Kasturi type, it is important to carry out spatial mapping of the potential and productivity of small-scale tobacco in West Lombok Regency.

II. LITERATURE REVIEW

Tobacco plants are a type of shrub that thrives in the tropics (Putra, 2020; Harini and Sitorus, 2019), often planted in rice fields during the dry season (Andri, 2019, and Nashar, 2022). Although grown in rice fields, tobacco is not classified as a food crop, but is consumed as kretek cigarettes, cigars, or white cigarettes (Yuliasari, 2016). Tobacco plants are also used as raw materials for the ink, paint, and perfume industries (Assegaf and Masrikhan, 2018).

Tobacco product is a plantation product that has the potential to develop products and can make a great contribution to the economy like other plantation products. In the past four years (2017-2020), tobacco production reached 2,850 tons or 23% of total plantation commodity production in the West Lombok Regency (BPS Lobar, 2020). Therefore, it is necessary to have proper management so that the development of tobacco products in West Lombok Regency can be optimal.

Aspects that need to be considered in the development of tobacco products are the condition of the area and the suitability of the land where one area is not the same as another. There needs to be a specific assessment so that tobacco product development can take place in appropriate areas.

West Nusa Tenggara (NTB) province is one of the tobacco-producing regions in Indonesia and provides the highest value-added compared to other plantation crop commodities. The NTB province is the largest Virginia tobacco-producing region in Indonesia and, at the same time, the main supplier of the needs of domestic cigarette factories (NTB in Figures, 2013).

Cut tobacco production was 7,025 tons and virginia tobacco are 54,494 tons with a planting area of 30,774.92 ha and average productivity of 1.77 tons/ha in 2012, higher than national productivity (BPS, 2013).

West Lombok Regency, which is located in the NTB province, has the potential for smallholder tobacco plants, especially cut tobacco. In 2020, the tobacco plantation area will be 283.50 hectares in West Lombok Regency. This area is the lowest compared to the area of the previous year, that is, in 2018 it was recorded as 553.5 hectares and in 2019 it was 571.00 hectares (NTB One Data, 2021).

The potential area suitable for the growth and development of tobacco plants in West Lombok Regency is quite extensive and covers the areas of Labuapi Subdistrict, Gerung Subdistrict, Kuripan Subdistrict, Lembar Subdistrict and Sekotong Subdistrict (Hijrianto, 2022); however, due to comparative advantage considerations, some tobacco growers switch to growing rice and maize during the dry season. Tobacco cultivation costs a relatively large amount of money (more than IDR 50 million/ha), so some farmers choose to plant rice or corn, which requires less money.

The development of the Centers of the Tobacco Products Industry is possible if there is a balance and harmony in the market, that is, the farmers in cultivation and the post-harvest handlers obtain a surplus of production or added value, as well as the parties involved in the trading system and marketing functions of the production facilities and the outputs of production, including the processing and transformation of tobacco products, each of them receives a reward proportional to the sacrifice of time, effort and capital, as well as the necessary resources in the chain of tobacco growing activities and the commercialization of tobacco products.

The problems described above are possible to overcome if supported by comparative advantage and competitive advantage, as shown by the results of the analysis of technical feasibility, location accessibility feasibility, financial feasibility, economic feasibility, social feasibility, formal legal feasibility, and environmental feasibility.

Based on the above thoughts, it is important to conduct a study on the Tobacco Products Industry Center Towards the Tobacco Products Industrial Area in West Lombok Regency.

III. SEARCH METHODS

3.1 Research methods

The method used in this study is a descriptive method with a quantitative and qualitative approach (Mulyadi, 2011). This quantitative descriptive study aims to evaluate the physical, chemical, and biological properties of soil in the tobacco-growing area of West Lombok. While the qualitative descriptive research aims to find out how are the processing techniques and land management to see the capacity of the land in the development area of tobacco cultivation in West Lombok Regency.

3.2 Research locations

This research was carried out in West Lombok Regency in 5 (five) sub-districts, namely: 1) Kediri District; 2) Kuripan District; 3) Gerung District; 4) Lembar District; and 5) Sekotong District.

3.3 Data collection techniques

This research uses primary data and secondary data. Primary data was obtained through topographic surveys and field observations, and interviews. Soil studies are carried out by taking samples (*samples*) of the soil and then analyzing them in the soil science laboratory. Field observations were made to collect data, on soil pH, temperature, terrain slope, soil solum depth, and weather conditions. At the time of observation, measurements were also made of the cultivation area, planting distance, number of leaves, weight of wet leaves, the weight of rolled leaves, the weight of chopped dry leaves, use of labor, and low-leaf tobacco prices, medium and high. During the interviews, data on the use of production facilities, transportation costs, types and equipment used in agricultural activities, harvesting, post-harvest handling, and product processing were collected.

3.3.1 Primary data

Primary data will be generated from direct measurements in the field and analysis at the Soil Science Laboratory, College of Agriculture, Mataram University. The detail of this type of data is presented in Table 1.

Table 1. Types of primary data to be measured in the field and in the laboratory

No	Data/Parameter	Type of data	Source /Method of Acquisition
1	Organic C/N	Primary	laboratory measurement
2	Soil pH	Primary	field measurement
3	Soil moisture	Primary	field measurement
4	Land slope (%)	Primary	field measurement
5	Solum soil depth (cm)	Primary	field measurement
6	Soil texture (sand, dust, clay)	Primary	laboratory measurements
7	Permeability (cm/day)	Primary	laboratory measurements
8	CEC Land	Primary	laboratory measurements
9	language saturation	Primary	laboratory measurements
10	Physical phenomena due to human activity	Primary	field observations

a. Laboratory analysis

1) C/N Organic

C-organic analysis by the *Walkley – Black method,* carried out by the Walkley and Black method, the principle of the Walkley and Black method is that $Cr_2O_7^2$ is given in excess and then reduced when it reacts with the soil, considered equivalent to C-organic in the soil sample. How to determine C-organic by procedure Walkley and Black's method, namely: a 0.5 g sample is taken, placed in a 500 ml Erlenmeyer, then 10 ml of $K_2Cr_2O_7N$ is added and the Erlenmeyer is shaken so that the solution is completely mixed with the reagent or reagent. A total of 20 mL of concentrated H2SO4 was added to form total organic C.

2) Cation Exchange Capacity (CEC)

Soil colloids (clay minerals and humus) are negatively charged so they can absorb cations. Exchange cations (such as Ca^{2+}, Mg^{2+}, K^+ and Na^+) in the soil adsorption complex will undergo a substitution reaction with the extractant (NH_4^+).

The Leaching and Direct Distillation methods were used to determine the practical Cation Exchange Capacity. The Leaching and Direct Distillation methods were used to determine the practical Cation Exchange Capacity. Extraction method at pH 7.0; Soil KB method to extract NH4 OA at pH 7.0; Phosphorus Extraction Method HCl 25%; K-Total 25% HCl extraction method

3) Base Saturation (KB)

Determination of KB with soil KB using the NH4 OA_C extract method at pH 7.0. Determine the content of Ca and Mg using an atomic absorption spectrometer (AAS), K, and Na using a flame photometer.

4) ground texture

Soil texture determination in the laboratory, known as mechanical analysis or granular analysis, is performed on the basis of the rate of sedimentation in the soil suspension. The principle of this method is that when soil (various types of particles) is put into water, it will sink and its speed is roughly proportional to the size of the particles.

5) Permeability

Darcy's law is applied. In this law, the soil is considered a set of fine, straight capillaries with uniform radii, therefore the movement of the water in the tube is considered to have the same velocity.

b. Used equipment

To view the moisture and pH of the soil is done directly in the field using *a soil tester,* the tool is plugged into the soil at a depth of 0-5 cm to read the moisture presentation in the soil and the value of salinity and acidity of the soil in that place.

Suunto clinometer (degrees and percentage of slope) while stopping the ground using a ground auger.

3.3.2 Secondary data

Secondary data to be collected are rainfall data, rock types, soil types, land use, and other supporting data obtained from various related agencies (Watershed Management Agency, River Basin Office, Meteorology, Climatology and Geophysics Agency West Nusa Tenggara, Lombok Central Agricultural Service, and community groups of farmers). The map data used in this study are soil type maps, rainfall maps, contour maps, regional management maps, and *digital elevation model* data.

Secondary data collection consists of agency surveys and literature surveys. An agency survey is a survey conducted to collect secondary or supporting data in agencies or offices. Literature or literature studies are carried out by reviewing the contents of the literature related to the topic of this research, including books, research results, spatial planning documents, final assignments, and articles on the Internet and in the media.

3.4 Stages of Evaluation of Potential and Evaluation of Land Suitability

3.4.1 Identification of the Characteristics and Types of Soils

The identification of soil types is based on maps obtained from the Bogor Soil Research Center. The results of the identification of the soil types found at the research site determined the amount and location of soil sampling. Soil sampling was carried out using the *Stratified Random Sampling method*.

3.4.2 Land Quality Preparation

Land quality preparation is carried out to determine the characteristics of the land (climate, slope) and the level of fertility of the land (physics and chemistry of the soil) based on the results of laboratory analysis and observations field. The method used in the elaboration of the quality and characteristics of the land is descriptive.

3.4.3 Land Suitability Assessment

The evaluation of the suitability of the land is carried out by comparing the growth requirements of the plants with the characteristic data of the land. The method used at this stage is overlap and matching (Djaenuddin, et al., 2011; Nina, et al., 2009). The overlay was made on top of the map that had been obtained by geographic information system (GIS) analysis so that a thematic map of the characteristics of the districts of the West Lombok district was obtained. The thematic maps resulting from the overlay are then compared with the requirements for plant growth, resulting in a land suitability map. Through tabular analysis in GIS software, suitable areas for tobacco cultivation can be determined. The level of suitability of the variables for an activity can be divided into 4 (four) classes, namely: very suitable (S1), suitable (S2), not very suitable (S3), and not suitable (N).

IV. RESULTS AND DISCUSSION

4.1. Potential Spatial Map and Assessment of Suitability of Land for

Popular tobacco development in West Lombok Regency

Layout analysis of land suitability for tobacco plants is carried out by identifying local land characteristics (land biophysics) through direct field surveys and geographic systems analysis (GIS).) using the matching method followed by overlaying on the map of parameters: *slope*, *texture*, permeability, erosion rate, and the content of various determinant nutrients to support tobacco growth (Djaenuddin, et al., 2011; Nina, et al., 2009). After entering and running all the modifier data, a spatial map of the potential suitability of the land for tobacco plants is obtained, shown in Figure 1.

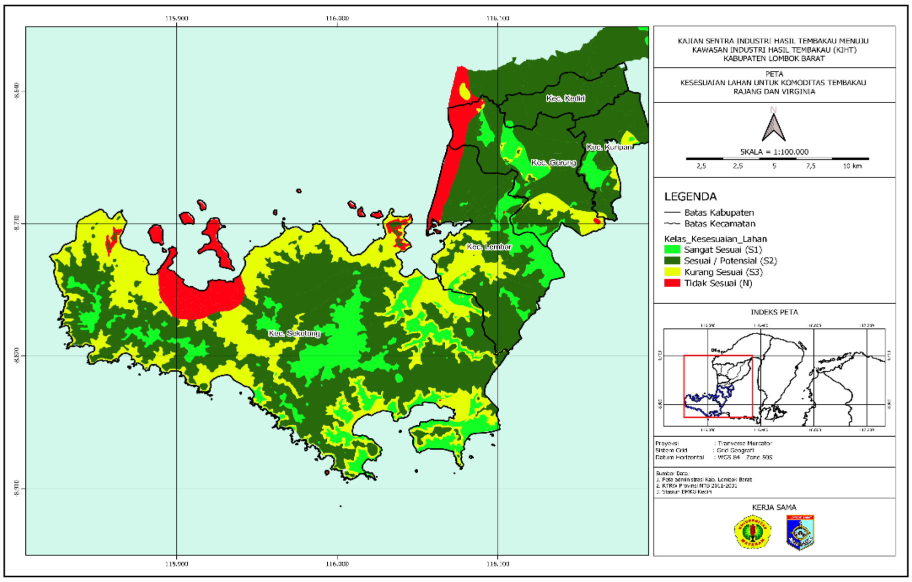

Figure 1. Map of land suitability for tobacco growing in West Lombok Regency

The results of the analysis of the land suitability assessment of tobacco plants in West Lombok Regency yielded four land suitability classes (Figure 1). These results are divided into actual and potential land suitability classes. The area that has the potential for the development of the Kasturi type of cut tobacco cultivation reaches 12,714.5 Ha spread over six sub-districts (Figure 2), while the four sub-districts that are essential for tobacco cultivation in West Lombok Regency, namely Gerung, Lembar, Sekotong, and Kuripan districts are capable of producing 1.523 tons per hectare per growing season.

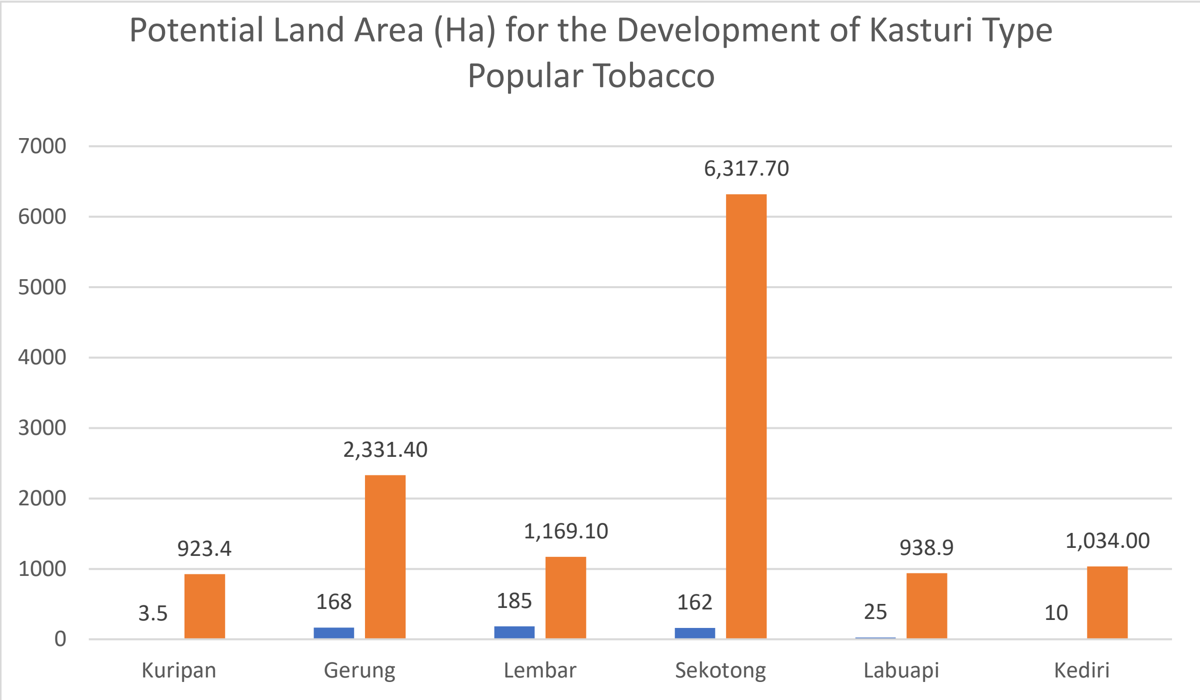

Figure 2. Potential land area for tobacco development in West Lombok Regency

Source: Primary and secondary data processed in 2021

Information: Actual Potential

The structure of the land suitability classification according to the FAO (1976) framework can be distinguished according to its level as follows:

Order: The global suitability status of the land. At the soil suitability order level, soils classified as suitable (S) and soils classified as unsuitable (N) are distinguished.

Class: The conformance status within the order level. At the class level, land belonging to the suitable order (S) is divided into three classes, namely: very suitable land (S1), moderately suitable (S2), and marginally suitable (S3). On the other hand, the lands belonging to the inappropriate order (N) are not differentiated into classes.

Table 2. Land suitability classes for tobacco plants

Class	land suitability	Information
1	Very Adequate (S1)	The unit of land for tobacco cultivation is in very good condition
2	Compatible (S2)	The land unit for tobacco plants is in good condition, there are several inhibiting factors
3	Least suitable (S3)	The land units for tobacco plants are in sufficient condition according to several inhibitory factors.
4	Inadequate (N)	The land units for tobacco plants are in a very inadequate condition and many inhibiting factors exist.

Source: Research and Development Center of the Ministry of Agriculture, 2011

The Assessment of Land Suitability for Tobacco Plants for Rajang in West Lombok Regency can be seen in the Appendix.

Table 3. Assessment of actual land suitability and efforts to improve potential land suitability for tobacco plants in Soil Map Units (SPT) in West Lombok Regency

Districts	Actual ranking	Repair business	Potential classification
Gerung	S2	- Lime spray to reduce the alkalinity level of the soil (pH > 7.5)	S1
Lembar	S2	- Creation of a border (terracing) to reduce surface flow (*runoff*) - Adding organic matter by returning plant residues or reducing the use of synthetic fertilizers - Construction of suitable irrigation canals - making ponds	S1
Sekotong	S2	- Construction of suitable irrigation canals - making ponds - Adding organic matter by returning plant residues or reducing the use of synthetic fertilizers	S1

Information:

* SlCL = *Silty clay loam* (silty clay loam)

*N: not adequate, S1: very adequate, S2: quite adequate, S3: marginally adequate

The land suitability class for tobacco plants at all soil sampling locations is included in the land suitability class "fairly suitable (S2)" because there are factors that do not agree with the ratings that support the maximum growth of tobacco (Table 3) for which improvement efforts are needed, except for the Kuripan District included in the land suitability class "Highly Adequate (S1)". To increase the soil suitability class (potential soil suitability class) it is necessary to carry out various improvement efforts.

Some steps to improve *the spirit* (Table 3) are to make ditches (*terraces*), make ponds and make water reservoirs (reservoirs) to collect water and spray lime to increase or decrease the acidity or alkalinity (pH), the value of the degree of Soil acidity (pH) affects the nutrients absorbed by plants. Soil reactions greatly affect the availability of nutrients to plants. Tobacco plants require a pH of 5.5 to 7.5, while soil sampling locations such as four sub-districts (tobacco growing centers) can be said to be "quite adequate" (pH 6 .9 to 7.0), except in the Gerung sub-district, which needs calcification. efforts to stabilize the pH suitable for tobacco growth, namely the pH range of 6.5-7.5. The organic-C content in three sub-districts is low (Gerung 1.59%, Lembar 1.55 and Sekotong 0.86), so efforts are needed to increase organic matter addition through crop rotation, especially with leguminous crops (palawija), returning the remaining crops after harvest and reducing the use of inorganic fertilizers.

The cation exchange capacity (CEC) at all locations shows the capacity of the soil to retain cations. CEC as an indicator of nutrient availability. Soils with a moderate to very high CEC will have the highest soil suitability class for annual crops. The CEC value is influenced by the grade and type of clay. The clayey texture has a high CEC value. The greater the amount of clay of the same type of soil, the greater the CEC. CEC clay suitability class "Very suitable" (> 16 c.mol) and very suitable texture and sufficient solum (practice media) in tobacco cultivation.

Breeding efforts to improve the inhibiting factors of tobacco growing (in the actual suitability class) may increase the land suitability class to "very suitable (S1)" in the potential land suitability class.

4.2. Production estimate

Based on the results of the land suitability and potential analysis, the area and distribution of potential land that can be used for cut tobacco development in West Lombok Regency can be identified. In general, the suitable land (potential land) for the cultivation of cut tobacco in West Lombok Regency is 12,714.5 ha. Spatially, these potential lands are distributed in 6 (six) districts, namely: Kuripan District, Gerung District, Lembar District, Sekotong District, and Labuapi District, as presented in Figure 2.

From Figure 2 it can be seen that the most extensive land potential (potential) for the development of cut tobacco is in the Sekotong district. This is understandable since the area of the Sekotong district is much larger than the other districts. Other areas that have land of relatively high potential are Gerung District, Lembar District, and Kediri District.

The productivity of tobacco cultivation varies between sub-districts, as shown in Figure 3. The highest productivity is produced by agriculture in the Lembar district, while the lowest is produced by agriculture in the Sekotong sub-district. Agricultural productivity ranges from 870 kg/ha to 1,386 kg/ha.

In addition, from the available potential land area, the tobacco products that will be produced can be estimated, ie by multiplying the potential land area by the tobacco productivity in each area of the sub-district. In this way, an estimated tobacco production yield of 12,191.793 - 14,464.228 tons per year is obtained.

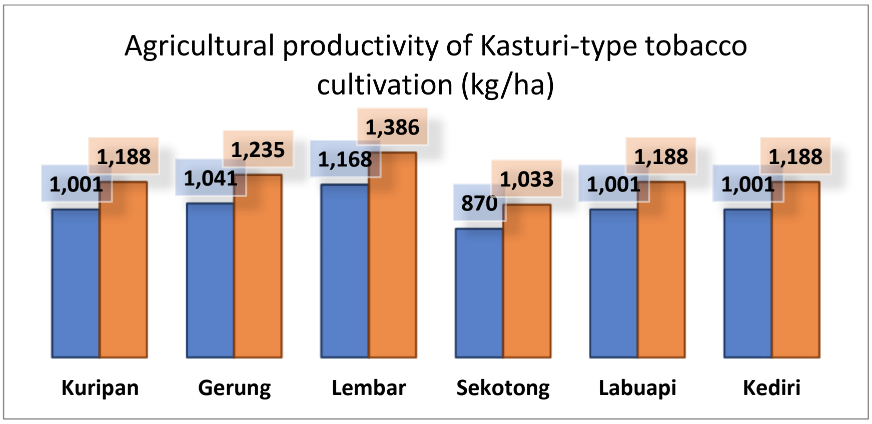

Figure 3. Spatial area of potential land and potential productivity of Kasturi-type popular tobacco in West Lombok Regency, 2022.

Source: Primary data

Information: Minimum; Maximum

4.3. Estimated labor absorption

The estimated labor absorption in the cultivation of cut tobacco is calculated by multiplying the potential area of land by the necessary labor. In this way, it can be estimated that the employment potential in the cultivation of cut tobacco in West Lombok Regency is 6,091,614 man-days which is divided into 3,626,793 man-days for cultivation activities and 2,464,821 man-days for harvest and post-harvest activities (Figure 4). In addition, assuming that the average working hours per day is 7 hours, it can be calculated that the total labor (people) required is 870,231 people, that is, 518,113 people for farming activities and 352,117 people. for harvest and post-harvest activities.

Taking into account the estimated number of labor absorption (Figure 4), the tobacco-growing business contributes to overcoming unemployment, especially in the areas that are tobacco-growing centers. Job opportunities or opportunities available in all tobacco activities.

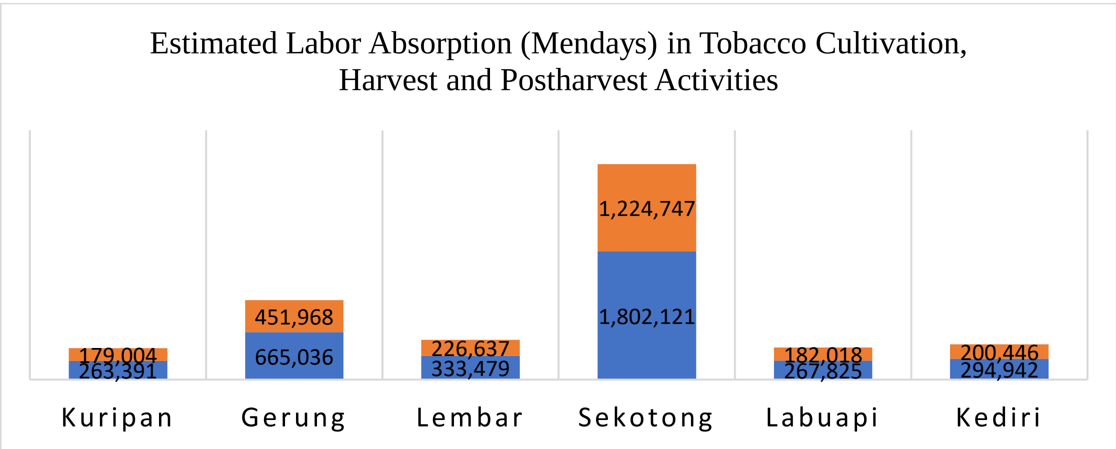

Figure 4. Estimation of the Absorption of Labor in the Activities of Cultivation, Harvest, and Postharvest in the Cultivation of Kasturi-Type Tobacco

Source: Results of estimation analysis processed from primary data.

Information: Cultivation Harvest and Postharvest

Assuming that tobacco-growing work processes and procedures are relatively the same between sub-districts, the number of workers is directly proportional to the potential land area. Therefore, the estimated employment number in Figure 4 is the maximum estimate. In reality, it is not possible for all the potential land area to be cultivated for tobacco because there is still a lot of need for the allocation of other crops such as rice, secondary crops, and horticulture (vegetables). Therefore, it is necessary to zone potential agricultural areas for tobacco cultivation. Areas with fairly good to very good irrigation canals, such as Gerung district and Kuripan district, should give priority to rice, secondary crops, and horticulture. The cultivation of tobacco plants is concentrated in the Sekotong district and the Lembar district area. Therefore, the job absorption estimates should be narrowed by concentrating on the potential in the Lembar district and Sekotong district.

Total labor absorption in Sekotong and Lembar districts is 3,586,985 HOK. If it is assumed that one HOK is equal to 7 (seven) hours of work and the number of work days in a season is 180 days, then the number of absorbed workers is 1,708 people.

In addition to absorbing labor in cultivation, harvest, and post-harvest; labor absorption opens up opportunities in the tobacco products industry. Each industry employs 5-10 people, namely 5 people in Small and Medium Industries Mole and 10 people in the Small and Medium Industries of Handmade Clove Cigarettes is 6-7 people, so the number of absorbed workers is 45 people.

Projections of Mole number and Medium Industries of Handmade Clove Cigarettes on West Lombok cannot be made with certainty, because new Small and Medium Industries of Handmade Clove Cigarettes data is not available every year. Because there are Small and Medium Industries Mole and Small and Medium Industries Cigarettes that work in undisclosed ways. From existing Small and Medium Industries data, the number of Small and Medium Industries formed is one to two units per year. Therefore, in the next 10 years, it is estimated that the number of Small and Medium Industries Mole and Small and Medium Industries of Handmade Clove Cigarettes will be around 15 to 17 units. If each unit absorbs 6-7 workers, the number of absorbed workers is projected to be 90 to 119 people with an annual growth of 5 to 7 people. However, the tobacco products industry has a large multiplier effect both up and down, so the number of workers absorbed, such as suppliers, distributors, and retailers, will increase. Drivers and loaders will also be absorbed.

V. CONCLUSION

The results showed that the potential for tobacco farmland development reached 12,174.5 ha, the largest in six districts, namely Kuripan District 923.4 ha, Gerung District 2,331.4 ha, Lembar District 1,169.1 ha, Sekotong District 6,317.7 ha, Labuapi District 938.9 ha and Kediri District 1,034.0 ha. The productivity of tobacco cultivation ranges from 870 kg/ha to 1,386 kg/ha, and the minimum estimated tobacco production potential is 12,191.794 tons/year. Projected employment of 6,091,614 working days adult in cultivation, harvest, and post-harvest/planting season activities.

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Appendix . Assessment of Actual Land Suitability for Tobacco Plants in the Soil Map Unit (SPT) of West Lombok Regency

Location (Subdistrict)	Requirements for land use/land characteristics												Land Suitability Class
	temperature - Annual temperature (°C)		Water Availability - Dry month (month) - Annual rainfall(mm)		Rooting Media - Texture - Effective depth(cm)		Nutrient Retention - CEC (cmol) - pH (H_2O) - K-available (meq%)		Please Available - C-Organic (%)		Train/Potential Mechanization - Slope (%) - Surface rock (%) - Rock outcrop		
	Mark	actual	Mark	actual	Mark	actual	Mark	actual	Mark	actual	Mark	actual	
Kuripan	28,8	S1	- 6 - 1457	S1	- C - 76	S1	- 16,2 - 6.90 - 1.73	S1	2.53	S2	- <2 - 2	S1	S2
Gerung	29.5	S1	- 7 - 1640	S1	- C - 75	S1	- 16,8 - 7.55 - 1.85	S2	1.59	S2	- <3 - 4	S1	S2
Lembar	30.0	S1	- 8 - 1200	S2	- SCL - 75	S1	- 16,4 - 6,93 - 3.51	S1	1.55	S2	- <15 - 4	S2	S2
Sekotong	30.5	S2	- 8 - 1100	S2	- CL - 75	S1	- 16.0 - 7.00 - 1.14	S1	0.86	S2	- <13 - 5	S2	S2

Information:
* SlCL = *Silty Clay Loam* , CL = *Clay Loam* , C = *Clay* , L = *Loam*
*N : not suitable, S1: Very suitable, S2: Fairly suitable, S3: Marginally suitable
Source: Center for Research and Development of Agricultural Land Resources, Ministry of Agriculture