Priorities for Development and Land Suitability Levels Leading Plantation Commodities Areas Outer Islands, Simeulue District – Aceh

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Abstract: The objective of developing plantations is in addition to increasing the productivity of cultivated commodities also as a driver of the regional economy, so that plantation development needs to be adjusted to the supporting factors such as the priority of development to be carried out and the suitability of the land to be used. The analysis result of development priorities and the level of land suitability for leading plantation commodities areas in the outer islands of Simeulue District – Aceh show : (1) Main development priorities: rubber, nutmeg and oil palm in 3 sub-districts, cocoa and cloves in 2 sub-districts; (2) Second development priorities: coconut in 5 sub-districts, cacao and cloves in 3 sub-districts, areca nut, nutmeg, rubber and sago in 2 sub-districts; (3) The third development priority: areca in 4 sub-districts, sago in 2 sub-districts, and coconut in 1 sub-district. Based on the results of the land suitability analysis of the leading plantation commodities, there were no plantation commodities that had land Very Suitable (S1) without limiting factors. In general, plantation commodities are in the actual and potential land suitability classes Sufficiently Suitable (S2) to Not Suitable (N) with permanent limiting factors for water availability (wa), including excessive bulk and number of dry months, also the land readiness factor (lp), including surface rock and rock outcrop.
Keywords: Leading plantation commodities, development priority, land suitability.

Introduction

Plantation cultivation has been widely recognized and popular since the sixteenth century, when the Portuguese began to settle on the Brazilian coast. They brought slaves from the colonies of the Atlantic Islands to work on sugarcane plantations, so that Brazil became known as the largest sugar cane plantation area and became the world's main producer of sugar (Hartemink, 2005). Along with the passage of time, plantation commodities become part of the agricultural sector providing large foreign exchange for developing countries, support the regional economy and improve the welfare of rural communities (Susila and Setiawan, 2007), including Indonesia. In 2018 the Indonesian plantation sub-sector was recorded to provide 38.54% of the GRDP of the agricultural sector, which amounted to Rp. 1,005 trillion (Jati, 2019).

Simeulue District, located in the Simeulue archipelago, Aceh Province, is one of the 111 outer islands of Indonesia in the Indian Ocean on the west coast of the island of Sumatra, with the outermost point of Pulau Simeulue Cut at position $2^0$31'47 "N - $95^0$55'5" E (Government Regulation No. 38 of 2002 which was changed to No. 37 of 2008). Although in regulation as Kepmentan No. 830 / Kept / RC.040 / 2016 concerning the Location of National Agricultural Area Development, Simeulue District not included in the plantation commodity development area. However, in this area various plantation crops such as cloves, coconut, palm oil, rubber, nutmeg, betel nut, cocoa and sago have long been cultivated by farmers and have become a source of income for the community.

This is in accordance with data from BPS Simeulue (2019) which notes that the plantation sub-sector together with the agricultural sub-sector have provided GRDP of the agricultural sector

at current prices, with an average share of 36.21% of the total GRDP of Rp. 1.59 trillion, -. However, this portion decreased from 37.38% in 2011 to 34.82% in 2018. Historically the Simeulue archipelago has long been known as the island of cloves and coconut, where the cultivation of this plant has been started since the Dutch Colonial period or after the end of the Aceh War in 1904 (Al Batawy, 2017). This condition shows that the plantation sub-sector is feasible and needs to be developed to support the regional economy in Simeulue District.

Law No. 34 of 2004 concerning regional autonomy mandates the government to be given the authority, responsibility and obligation in managing the outer islands physically, economically, socially, culturally and politically. The problem is how the local government is able to manage and utilize the outer islands (Chatarina, 2012), including the development and management of the plantation sub-sector as a potential resource. In terms of empowerment, this activity will encourage aspects of social and economic development in society (Alihar, 2018).

The development and development priorities of agricultural crops in an area need to consider the actual conditions of the crop itself, including product advantages, proportional growth and growth in the share of the product area (Sitorus, 2014), and the level of land suitability to be used (Sitorus, 2004). This is because basically leading products are basic products that have a strategic position to be developed in an area (Bachrein, 2003). Proportional growth is the growth of production in an area that is faster or slower than the growth of production in a wider area, while the growth in the share of the region is the competitiveness of a sector in an area compared to the growth of the same sector in other regions (Abidin, 2015). The level of land suitability is the level of suitability of a plot of land for a particular use by comparing the quality of the land with the desired land use requirements (Sitorus, 2004).

Identification of development priorities and land suitability levels for a commodity is necessary, so that the direction of plantation development can be more focused to be determined as a development policy. This means that the direction of the plantation development policy of a region must be in accordance with the conditions of the commodity and available land. Based on these facts plantation crops as a potential commodity to improve the regional economy in Simeulue District need to be assessed for their development priorities and the level of land suitability as a reference for determining future development programs.

Research Methods

Time and Location of Research

The research was conducted in May - September 2019 in Simeulue District, Aceh Province. Simeulue District was chosen as the research location with the consideration that Simeulue District is the outer archipelago in the southern part of Aceh Province which has long been known as a producer of cloves and coconuts.

Research Data

The research was conducted descriptively using primary and secondary data through data collection techniques: (1) documentation, (2) observation of plantation objects, (3) and objects of plantation cultivation land in Simeulue district.

Data Analysis Methods

The analytical methods used in the research, among others; (1) descriptive analysis by analyzing the potential of plantation commodities in Simeulue District, (2) Location Quetion (LQ) analysis and Shift Share (SSA) analysis to see leading commodity, proportional growth

and growth in the share of plantation commodity areas, (3) land suitability analysis leading commodity of plantation. The determination of development priorities is based on the criteria of Table 1, while the classification of land suitability is based on Table 2.

Table 1. Priority Criteria for Plantation Commodity Development Based on Leading (LQ), Proportional Growth (PP) and Regional Share Growth (PPW).

Development Priorities	LQ	PP	PPW
Main	>1	Positif (Fast)	Positif (Competitive)
Second	>1	Negatif (Slow)	Positif (Competitive)
	>1	Positif (Fast)	Negatif (Not Competitive)
Third	>1	Negatif (Slow)	Negatif (Not competitive)

Source : Sitorus (2014).

Table 2. Classification of Land Suitability Class.

Class	Information
S1 (Highly Suitable)	Land has limiting factors that are not dominant and will not significantly reduce land productivity.
S2 (Moderately Suitable)	Land has a limiting factor and will affect its productivity. This class requires additional input, but this barrier can usually be resolved by the farmer himself.
S3 (Marginally Suitable)	Land has a dominant limiting factor and will affect productivity. This class requires more additional input than land classified as S2. To overcome this, high capital is needed, so it needs assistance to farmers to overcome it
N (Not Suitable)	Land has a very dominant limiting factor and it is difficult to overcome.

Source: Permentan (2013).

Results and Discussion

Plantation Crops

Simeulue District as an archipelago and is located in the south of the Sumatra island is an area that has long relied on the agricultural and plantation sectors to support its economy. This condition can be seen that various plantation commodities have long been cultivated, either in the form of monocultures or mixed gardens. Mixed gardens are generally preferred by the community and are located around rural areas, so that they have a very large potential to support the economy of rural communities. The condition of smallholder plantations in Simeulue Regency in 2017 is as shown in Table 3.

If viewed from the area of existing plantations, commodity cloves occupy the first position with an area of 37.88% or 15,951 Ha, followed by coconut 18.30% or 7,705 Ha, and the smallest is cocoa 4.56% or 1,022 ha. The extent of the clove and coconut plants in Simeulue District makes this commodity an icon of the island of Simeulue. However, if viewed from its productivity, this plant has low productivity compared to those cultivated elsewhere.

Clove productivity is lower than Aceh's productivity of 0.564 tonnes/ha/year (Distanbun Aceh, 2017) and nationally 0.383 (Dirjenbun, 2018). Coconut productivity in the form of copra is lower than Aceh's productivity of 0.815 tonnes/ha/year and national productivity of 1.10 tonnes / ha / year (Dirjenbun, 2017). The productivity of nutmeg is lower than the productivity of

smallholder gardens nationally 0.19 tonnes/ha/year (Dirjenbun, 2017). The productivity of rubber is lower than the productivity of smallholder gardens nationally at 0.926 tonnes/ha/year and large plantations from 1.327 - 1.5 tonnes/ha/year. The productivity of palm oil in the form of CPO is lower than the national productivity of 3.8 tonnes/ha/year with a potential production of 7.7-9.1 tonnes/ha/year (Siahaan, 2017).

Table 3. Potential of Plantation Plants in Simeulue District (2017).

No	Discription	Volume	%	No	Discription	Volume	%
1	Rubber			5	Betel Nut		
	Land Area (Ha)	3.827	9,09 %		Land Area (Ha)	1.951	4,63 %
	Production (Ton)	673			Production (Ton)	238	
	Productivity (Ton/Ha)	0,22			Productivity (Ton/Ha)	0,16	
2	Coconut			6	Clove		
	Land Area (Ha)	7.705	18,30 %		Land Area (Ha)	15.951	37,88 %
	Production (Ton)	3.659			Production (Ton)	3.723	
	Productivity (Ton/Ha)	0,55			Productivity (Ton/Ha)	0,33	
3	Palm Oil			7	Nutmeg		
	Land Area (Ha)	3.813	9,05 %		Land Area (Ha)	4.589	10,90 %
	Production (Ton)	9.164			Production (Ton)	280	
	Productivity (Ton/Ha)	2,10			Productivity (Ton/Ha)	0,06	
4	Cocoa			8	Sago		
	Land Area (Ha)	1.922	4,56 %		Land Area (Ha)	2.356	5,59 %
	Production (Ton)	249			Production (Ton)	253	
	Productivity (Ton/Ha)	0,19			Productivity (Ton/Ha)	0,14	
	Total Luas	42.114					

Source: Plantation Office, Animal Husbandry and Animal Health in Simeulu Regency (2018).

This low productivity indicates that the cultivation is not in accordance with the standard of plantation management to obtain maximum productivity. This is as the result of the validation of plantation commodities during the research. where the community has not managed their plantation business optimally. This is also in accordance with the statement of the Head of the Simeulue District Forestry and Plantation Service that half of the clove plantation area in Simeulue Regency is unproductive because the plants are old, replanting is late. even though in recent years the price of cloves has continued to improve (Zulkarnain, 2019).

Priority for the Development of Plantation Leading Commodities

The results of the analysis of leading plantation commodities (LQ) followed by Shift share analysis (SAA) for Proportional Growth (PP) and Regional Share Growth (PPW), the priority for the development of leading plantation commodities in Simeulue District as shown in Table 4. This table shows that the sub-district which has the highest leading regional for plantation commodities is Center Simeulue Sub District (2.83) with the main commodities cocoa, rubber and cloves; the second leading commodities of betel nut and nutmeg; the third leading

commodity is sago. The superiority of this region is followed by West Simeulue (2.04), East Simeulue (1.62), Simeulue Cut (1.17), South Teupah (1.07), Alafan (1.06), Teluk Dalam (0.78).), West Teupah (076), Center Teupah (0.65) and Salang (0.40) with the leading commodity of oil palm without the second and third leading commodities.

The level of regional superiority will describe the density or high activity of the community in cultivating various plantation commodities. Likewise, on the other hand, a low level of regional superiority illustrates the low level of community activity in cultivating plantation commodities in the region. The high level of agricultural activity in an area is related to the support of production factors such as fertile land conditions, social society, and politics in the form of government policies (Asiry et al., 2013; Handayani et al., 2020; Nasution et al., 2020). Likewise Center Simeulue Subdistrict has strong production factor support so that it has three main development priority commodities are cocoa, rubber and cloves. Meanwhile, Salang Subdistrict has low production factor support so that it only has the main commodity of oil palm without the second and third leading commodities.

Table 4. Development Priority for Leading Plantation Commodities.

No	Sub Distrct and Leading Commodities (LQ)	Priority for Development		
		First	**Second**	**Third**
1	Center Simeulue (2,83) : Cacao (7,30); Rubber (5,66); Betel Nut (2,99); Sago (2,88); Nutmeg (2,36); Clove (1,08).	Cocoa, Rubber, Clove	Betel Nut, Nutmeg	Sago
2	West Simeulue (2,04) : Nutmeg (4,29); Sago (4,06); Betel Nut (3,07); Cocoa (2,13); Coconut (1,90); Clove (1,56); Rubber (1,04).	Nutmeg, Rubber	Betel Nut, Cocoa, Clove	Sago, Coconut
3	East Simeulue (1.62): Nutmeg (4.50); Rubber (2.82); Cocoa (2.73); Coconut (2.22); Betel nut (1.70).	Nutmeg, Rubber	Cocoa, Coconut	Betel Nut
4	Simeulue Cut (1.17): Betel Nut (2.88); Rubber (2.16); Nutmeg (2.03); Coconut (1.74); Palm Oil (1.12).	-	Rubber, Nutmeg, Coconut, Clove	Betel Nut
5	South Teupah (1.07): Cocoa (2.11); Rubber (2.03); Coconut (1.73); Betel nut (1.35).	-	Cocoa, Rubber, Coconut	Betel Nut
6	Alafan (1,06) : Sago (2,43); Kelapa (2,05); Pala (1,82); Cengkeh (1,63).	Nutmeg	Sago, Coconut, Clove	
7	Teluk Dalam (0.78): Palm Oil (1.29); Sago (1.36); Betel Nut (1.04).	Palm oil	Sago	Betel Nut
8	West Teupah (0.76): Cloves (3.09); Coconut (1.12).	Clove	Coconut	-
9	Center Teupah (0.65): Cocoa (1.31); Palm Oil (1.26).	Cocoa,Palm Oil	-	-
10	Salang (0,40) :	Palm Oil	-	-

No	Sub Distrct and Leading Commodities (LQ)	Priority for Development		
		First	Second	Third
	Palm Oil (1,66).			
Main Development Priorities: Rubber, Nutmeg, Palm Oil (3 Sub Districts); Cocoa, Cloves (2 Sub Districts). **Second Development Priority:** Coconut (5 Sub Districts); Cocoa, Cloves (3 Sub Districts); Betel Nut, Nutmeg, Rubber, Sago (2 Sub Districts). **Third Development Priority**: Betel Nut (4 Sub Districts); Sago (2 Sub Districts); Coconut (1 Sub District)				

Source : Research Data (2019).

Ideally, the development of agricultural commodities should follow existing development priorities so as to facilitate development and streamline the production capital needed (Handayani et al., 2020; Nasution et al., 2020). Efforts to increase the development priority of a commodity can be done by increasing production through extensification and or intensification. Intensification is a step to increase production carried out by optimally utilizing various agricultural resources so as to produce maximum products (Nurhidayah et al., 2019). Meanwhile, extensification is an effort to increase agricultural production by expanding new agricultural land, for example clearing forests and shrubs, swamps, and unused agricultural areas (Adrianto, 2004). However, in selecting and opening new land, it is better to pay attention to the suitability of the land to be used for the commodities to be developed, because the suitability is related to production costs that must be incurred and the production of the resulting plants (Sitorus, 2004; Ritung et al., 2007).

Land Suitability for Leading Plantation Commodities in Priority Areas of Development. Analysis of the leading commodities of a region that produces information on leading commodities and commodity development priorities based on growth and competitiveness criteria is very important to do. The combination of the results of this analysis will produce information on the priority of commodity development, this information will be more perfect if it is equipped with information on land suitability that is prioritized for development.

Table 5. Land Suitability of Leading Plantation Commodity Development Priorities Simeulue Regency.

Main Priority				**Second Priority**			
Commodity	**Sub District**	**Land Suitability**		**Commodity**	**Sub District**	**Land Suitability**	
		Actual	**Potential**		**Aktual**	**Aktual**	**Potensial**
Nutmeg	West Simeulue	**Nwa**;S2nr; S3eh; **S2-lp**	**Nwa**; S2eh; **S2lp**	Nutmeg	Center Simeulue	**Nwa**;S2nr; **S2lp**	**Nwa**; **S2lp**
	East Simeulue	**Nwa**;S2nr; S2eh;**S2-lp**	**Nwa**; S2eh; **S2lp**		Simeulue Cut	**Nwa**;S2nr; S3eh; **S2lp**	**Nwa**; S2eh; **S2lp**

Main Priority				**Second Priority**			
	Alafan	**Nwa**; S2nr;S3eh; **S2lp**	**Nwa**; S2eh; **S2lp**	Cocoa	West Simeulue	**S3wa**;S3nr; S3eh; **S2lp**	**S3wa**;S2nr; S2eh; **S2lp**
Cocoa	Center Simeulue	**S3wa**; S3nr; **S2lp**	**S3wa**; S2nr; **S2lp**		East Simeulue	**S3wa**;S3nr; S2eh; **S2lp**	**S3wa**; S2nr; **S2lp**
	Center Teupah	**S3wa**; S3nr; S2eh; **S2lp**	**S3wa**; S2nr; **S2lp**		South Teupah	**S3wa**;S3nr; S2eh; **S2lp**	**S3wa**;S2nr; **S2lp**
Rubber	Center Simeulue	**S3wa**; S2oa; 2nr; S2eh; **S2lp**	**S3wa**; **S2lp.**	Rubber	Simeulue Cut	**S3wa**; S2oa; S2nr; S2eh; **S2lp**	**S3wa**; **S2lp**
	West Simeulue	**S3wa**; S2oa;S2nr; S3eh; **S2lp**	**S3wa**; S2eh; **S2lp**		South Teupah	**S3wa**; S2oa; S2nr; S2eh; **S2lp**	**S3wa**; **S2lp**
	East Simeulue	**S3wa**; S2oa; S2nr; S2eh;**S2lp**	**S3wa**; **S2lp**	Betel Nut	Center Simeulue	**S3wa**; S3nr; **S2lp**	**S3wa**; S2nr; **S2lp**
Clove	Center Simeulue	**S3wa**; S2nr; **S2lp**	**S3wa**; **S2lp**		West Simeulue	**S3wa**; S3nr; S3eh; **S2lp**	**S3wa**; S2nr; S2eh; **S2lp**
	West Teupah	**S3wa**; 2nr;S2eh; **S2lp**	**S3wa**; **S2lp**	Coconut	East Simulue	**S2wa**; S2nr; S3eh; **S2lp**	**S2wa**; S2eh; **S2lp**
Palm Oil	Teluk Dalam	**S3wa**; S2nr; S2eh; **S2lp**	**S3wa**; **S2lp**		Simeulue Cut	**S2wa**; S2nr; S2eh; **S2lp**	**S2wa**; **S2lp**
	Center Teupah	**S3wa**; **S2rc;** S2nr;S2eh; **S2lp**	**S3wa**; **S2rc;** **S2lp**		South Teupah	**S2wa**; S3nr; S2eh; **S2lp**	**S2wa**; S2nr; **S2lp**
	Salang	**S3-wa**; S2nr;S2eh; **S2lp**	**S3wa**; **S2lp**		Alafan	**S2wa**; S2nr; S2eh; **S2lp**	**S2wa**; **S2lp**
Third Priority					Tupah Barat	**S2wa**; S3nr; S2eh; **S2lp**	**S2wa**; S2nr; **S2lp**
Sago	Center Simeulue	**S3wa**; S3nr; **S2lp**	**S3wa**; S2nr; **S2lp**	Sago	Alafan	**S3wa**; S3nr;S2eh; **S2lp**	**S3wa**; S2nr; **S2lp**

Main Priority				Second Priority			
	West Simeulue	**S3wa**; S3nr; S3eh; **S2lp**	**S3wa**; S2nr;S2eh; **S2lp**		Teluk Dalam	**S3wa**; S3nr;S2eh; **S2lp**	**S3wa**; S2nr; **S2lp**
Betel Nut	East Simeulue	**S3wa**; S3nr; S2eh; **S2lp**	**S3wa**; S2nr; **S2lp**	Clove	West Simeulue	**S3wa**; S2nr;S3eh; **S2lp**	**S3wa**; S2eh; **S2lp**
	Simeulue Cut	**S3wa**; S2nr; S2eh; **S2lp**	**S3wa**; **S2lp**		Alafan	**S3wa**; S2nr;S2eh; **S2lp**	**S3wa**; **S2lp**
	South Teupah	**S3wa**; S3nr; S2eh; **S2lp**	**S3wa**; S2nr; **S2lp**	**Note:** wa = water availability or rainfall; nr = nutrient availability; eh = danger of erosion; lp = land preparation; oa = drainage; rc = surface soil texture			
	Teluk Dalam	**S3wa**; S3nr; S2eh; **S2lp**	**S3wa**; S2nr; **S2lp**				
Coco nut	West Simeulue	**S2wa**; S2nr; S3eh; **S2lp**	**S2wa**; S2eh; **S2lp**				

Source : Recearch Data (2019).

Information on land suitability for a commodity is needed in determining land use in accordance with the available carrying capacity, namely soil and climate (Pradana et al., 2013). Climatic factors such as rainfall, temperature and humidity have a role as limiting factors and conditions for plant growth on plant physiological aspects, while soil factors in the form of physical environment such as physical, chemical and biological properties of soil act as a growth medium and provide nutrients for plants (Ritung et al., 2007; Ritung et al., 2011). The results of the land suitability analysis of the leading plantation commodities in Simulue District were carried out based on climatic and soil conditions which were adjusted to the suitability standards of crop land as shown in Table 5.

The results of the land suitability analysis Table 5. show that there were no plantation plants that had S1 or Highly Suitable land suitability without limiting factors. In general, the plants are in the actual and potential land suitability class S2 or Moderately Suitable to N or Not Suitable with permanent limiting factors for water availability (wa), including excessive rainfall and the number of dry months, and soil preparation factors (lp), including surface rock and rock outcrop.

The main priority development commodities include nutmeg, cocoa, rubber, cloves and oil palm which have actual and potential land suitability of S2 or Moderately Suitable to N or Not Suitable. Actual land suitability is land suitability based on the biophysical properties of the soil or land resources before the land is given the necessary inputs to overcome the

constraints, whereas potential land suitability describes the suitability of land that will be achieved if improvement efforts are made (Ritung et al., 2007).

Nutmeg is the main development priority commodity in the sub districts of West Simeulue, East Simeulue and Alafan which have actual and potential land suitability level of S2 or Moderately Suitable to N or Not Suitable. This suitability has a permanent limiting factor for water availability (wa) with conditions of excessive rainfall and the number of dry months of 3 months, and land preparation factors (lp), which include surface rock and rock outcrops. Furthermore, cocoa plants are the main priority commodity for development in the sub districts of Center Simeulue and Center Teupah which have actual and potential land suitability level of S2 or Moderately Suitable to S3 or Marginally Suitable. This suitability has a permanent limiting factor for water availability (wa) with conditions of excessive rainfall and the number of dry months of 3 months, anda land preparation factor (lp) which includes surface rock and rock outcrops.

Rubber plants are the main priority commodity for development in the sub districts of Center Simeulue, West Simeulue and East Simeulue which have actual and potential land suitability level of S2 or Moderately Suitable to S3 or Marginally Suitable. This suitability has a permanent limiting factor for water availability (wa) with conditions of excessive rainfall and the number of dry months of 3 months, and land preparation factor (lp) which includes surface rock and rock outcrops. Furthermore, the clove plant is the main priority commodity for development in the sub districts of Center Simeulue and West Teupah, which have an actual and potential land suitability level of S2 or Moderately Suitable to S3 or Marginally Suitable. This suitability has a permanent limiting factor for water availability (wa) with conditions of excessive rainfall and the number of dry months of 3 months, and land preparation factor (lp) which includes surface rock and rock outcrops.

Oil palm is a priority commodity for development in the sub districts of Teluk Dalam, Center Teupah and Salang, which have actual and potential land suitability level of S2 or Moderately Suitable to S3 or Marginally Suitable. This suitability has a permanent limiting factor for water availability (wa) with conditions of excessive rainfall and the number of dry months of 3 months, root conditions (rc) which include 15-35% of the coarse fraction in Center Teupah sub district, and land preparation factors (lp.) which include surface rock and rock outcrop.

As a permanent limiting factor, rainfall in Simeulue District with an intensity of 3,690-3,939 mm/year is a limiting factor for cultivated plantations so that the land becomes class S3 or Marginally Suitable to N or Unsuitable. In general, cultivated crops such as cocoa, rubber, cloves, oil palm, betel nut, coconut and sago want rainfall of 1,500-3,000 mm / year, except for nutmeg which wants 2,000-4,000 mm / year (Ritung et al., 2007; Ritung et al., 2011).

Technically, rain provides water for plants where lack or excess of water will adversely affect plant growth and production (Sinaga et al., 2017). High rainfall always coincides with clouds that cover the sun so that it reduces the quality and intensity of sunlight needed in the plant photosynthesis process. If the photosynthetic process is disturbed, the growth and production of plants will also be disturbed due to the disruption of carbohydrate formation ($C_6H_{12}O_6$) which does not take place perfectly (Manurung, 2014). The amount of rainfall and rainy days that are too high will also complicate the management and maintenance of plantations, harvest work, the high risk of pests and diseases for plants (Hasnunidah, 2009; Manurung, 2014).

Another factor that also permanently affects the suitability of plantation commodity land in Simeulue District is the soil preparation factor (lp) consisting of surface rock and rock outcrops. Surface rock is the amount of rock distribution on the soil surface, while rock outcrop shows the amount of rock in the soil solum. Surface rock is correlated with reduced usable land surface, while rock outcrop correlates with root penetration which will interfere with root freedom in penetrating the soil (Sitorus, 2004). Impaired root development affects the absorption of nutrients by plant roots, because roots absorb nutrients from the soil through root hairs located at the root tips (Hasnunidah, 2009).

Conclusion

As one of the outer islands of Indonesia which is located in Aceh Province, Simeulue District has the potential in developing plantation commodities and for this clove commodity it has been going on since the Dutch colonial era. Based on the supporting conditions, the leading plantation commodities in Simeulue District have first priority development of rubber, nutmeg and oil palm in 3 sub districts; cocoa and cloves in 2 sub districts. The second priority for the development coconuts in 5 sub districts, cacao and cloves in 3 sub districts, betel nut, nutmeg, rubber and sago in 2 sub districts. The third priority for the development betel nuts in 4 sub districts, sago in 2 sub districts and coconut in 1 sub district.

Based on the suitability of land to leading commodities, there is no crop yielding commodity with Higly Suitable (S1) without limiting factors. In general, plantation commodities are in the suitability of actual and potential Moderatly Suitable (S2) to Not Suitable (N) with permanent limiting factors of excessive rainfall (wa), surface rock conditions and rock outcrops (lp). Meanwhile, the non-permanent limiting factors are soil pH and nutrient availability (nr), land slope and the dangers of erosion (eh) and drainage (oa). The leading plantation commodity crops in Simeulue District has the opportunity to be developed to stimulate the regional economy, by taking their development priorities and considering the level of suitability of the land to be selected for cultivation land.

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