The Development of Special Economic Region of Food Agriculture Industrial Zone in the District of Merauke Papua-Indonesia

Abubakar Iskandar[*]

State Administration Study Program, Djuanda University, Bogor Indonesia
State Administration Major, Djuanda University, Bogor, Indonesia
Email: abu1958@yahoo.com

Abstract

The development of special economic region has the strategic value as the promoter of the development of the agriculture processing industry, especially rice, and other food material. In addition the rice that is produced can be exported to the neighboring countries. The purpose of this research is to describe the special economic region of the Development Zone; to describe the land varsity, the water zone, the agriculture food crop, horticulture, the fishery and the Livestock; To define the crop index model design, horticulture , Livestock and fishery to determine the superiorty rank; to analyze implementation stadium strategy by conducting a study to the interaction between the availability of resources with the development strategy that has been stipulated. This research design is cross sectional. This research was conducted in the Merauke District on Desember 2016. The data required are primary and secondary data. The means of collecting data are : pollings, interviews, observations, FGD, and documentation studies, and the sample collection technique is progress collecting. The data is analyzed by flow model, superiority selection model, resource availability model, and correlational. The research result shows that the agriculture processing industry as vast as 110,62 acres that consists of the Agro Techno Park Zone, the Agriculture Production facility Industrial Zone, the food agriculture Processing Industrial Zone, the Trading and service Zone and the Agriculture Industrial Zone. The requirement of water for paddyfield irrigation is obtained from the rivers. This Region is specialized for food crops for wet and dry land.

Key word: Food crops; Horticulture; Deployed Land; Irrigation; Development Zone.

----

* Corresponding author.

1. Introduction

1.1. Back ground

The strategic value of the development of special economic region of Salor District of Merauke consist a strategic value which is as a promotor of the development agriculture processing industry, especially rice, and other food material, including food and beverage industry. The development of agriculture processing industry will increase the add value, providing rice for the national demand, thus will reduce the volume of the rice imported and will save devisa. Besides that the rice produced partly can be exported to neighboring countries like Papua Nugini, even to Fiji, Vanuatu, Tonga and other Pacific countries. With the export activity will increase the relation quality among Indonesia and those countries. Food agriculture has the potention to be developed according to the market demand that is always increasing and the seed source that is available. One of the advantage of food agriculture is the product characteristic that possess the value of demand elasticity toward a high change in income [18]. The main problem that is studied in the effort of the development of food agriculture is that there is not a proper strategy that is implemented to maximize the potention, that allows food agriculture become a competitive industry and realize agriculture revitalization. The reality is that the national Superior product strategy and the region reliable product once were conducted by the Republic of Indonesia Agriculture Department that is agriculture development based on comodity sector like INNAYAT (Industri Peternakan Rakyat = The People's Livestock Industry) and the strategy based on commodity like SPAKU (Sentra Pengembangan Agrobisnis Komoditas Unggulan (Superior Commodity Agrobusiness Development Center) have not been able to place food agriculture as a *leading sector* in the Merauke District national development that is a region that possess a geografic advantage as one of the gate door in the East Indonesia part to the international region (global market accessibility), besides the agronomic superiority with the existencse of some agrobusiness commodity, therefore it is considered important to optimized food agriculture. According to [4] a startegy is a tool to obtain a company purpose in the relation with the long term goal, follow up program, and resource alocation priority. By [10] the strategy is a tool to create a competitive advantage. Therfore one of the strategy focus is to determine wether that business must exist or not. A good comprehension to the strategy concept and other concept that is related, is very important to determine the strategy success that is composed like below:

a. *Distinctive Competence*: an act that is conducted by a company in order they can conduct an activity better than their competitor.

b. *Competitive Advantage* a spesific activity that is developed by a company in order that they are more superior than their competitor.

These two concept certainly will not stand alone from strategy management problems. Strategy management teaches how to maximize an organization effectivity as a whole, and also teaches how to improve their efficiency [17,5,11]. Three element that becomes management focus are organization, environment and strategy. The organization element is related with the interests of the perpetrator both individually and organization in the achievement of vision, mission and organization goal. The environment element is related with the economic

aspect (the market power and competition}, sosio cultural, geographic location, government and technology. The strategy element is related with the *future intention*, and *competitive advantage* from the organization [12,17,6].. One of the strategy management model that has been designed by [2] that is :
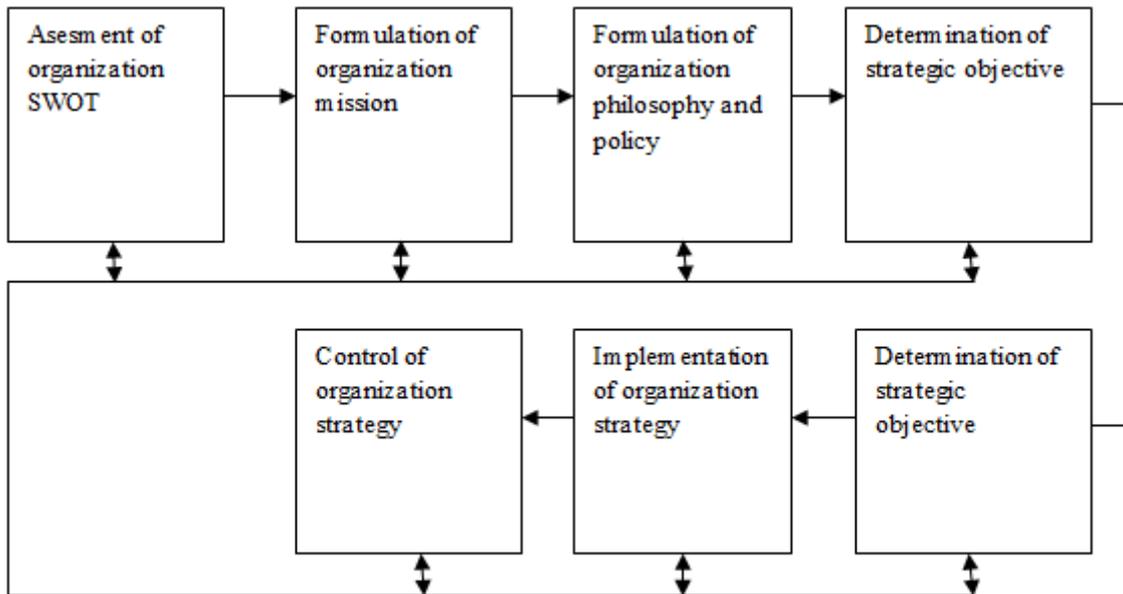
Figure 1: Reference [2] Strategy Management Model

Therefore the development of special economic region Salor Merauke District becomes very important in this region it is considered as one of the food processing industry center that is determined as National granary as vast as 1,2 million acres, will provide an *income multipli-er effects* and *employment multiplier effects* in the *hinterland* and the surrounding regions. Therefore it will increase the society's income, absorb employment, increase income tax and furthermore will increase PDRB (Produk Domestik Regional Bruto= Regional Domestic Product Bruto) Merauke District and Papua Province and National PDB (produk domestik bruto =Domestic Product Bruto)

Special economic region has the area of land as vast as 185,32 acres and the whole land is owned by the government. Special economic region Salor is destined processing industry, production facility industry, and food logistic based on rice, corn, soybean, sweet potato, cassava, peanut and horticulture. Processing Industry includes agriculture industry in a broad sense, because it does not only include food crop, but also other commodities like horticulture. The development agriculture production facility industry, among them inclu-

ding organic fertilizer, insecticide, herbicide, pesticide, and agriculture machine assembling. While the logistic/wharehouse include wharehouse for production input and production product. The superior commodities that will be developed into the agriculture processing industry base, that is : rice, corn, sweet potato, cassava, peanut and soybean. The processing Industry that is developed is not only the semi-finished industry but will become finished goods industry. Also the development of processing industry is not only characterized *vertical value chain* 9 from a raw material of a commodity to a finished goods), but also characterized *horizontal value*

chain that is the existence of processing industry of a commodity that can be used for other industry development.

For example, a poultry industry use waste from rice industry that is combined with corn, nuts. Processing industry from carbohydrate crop like rice can be the processing from rice grain rice and rice to rice, rice powder until it becomes food material. While the waste like Bran and husk can be developed into food industry, cosmetics, house hold and many others. While corn crop can be processed into picked corn that furthermore can be processed into powder, essence, and material that the end product will be the raw material for industry, food, poultry, and oil. Cassava can be processed into processed food, dried cassava, fermentation, onggok, and tapioka powder that the end product becomes food, analog rice and many others. Sweet potato can be processed into processed food, processed beverage, sweet potato powder and many more. The development of agriculture processed industry certainly depends on their investors [3]

Salor special Economic region will be devided into several zones that is (a) food agriculture Processed Industry Zone, (b) Agriculture Production Facility Industri Zone, (c) Warehouse Zone, (d) Agro Techno Park Zone that includes Laboratorium, green house and experiment garden, (e) Trade and service Zone, (f) Office Zone, (g) Education and training Zone and (h) The development and enhancement Road

1.2. Purpose

Based on the explanation above the research purpose is as following below:

1.To describe special economic region development zone;

2.To describe the vastness food crop agriculture land, and horticulture

3.To formulate the design of food crop index model, horticulture, to determine the superiority rank

4.To analize the availibility of food crop resources that is available in the special economic region.

2. Material And Method

2.1. Design, Location and Research Time

This research design is *cross sectional*. This research is conducted in Merauke District Papua Province. This research takes place during December 2016.

2.2. Data type and Their Collecting Method

The data that are required are primary and secondary data. Primary data is obtained from the horticulture farmers, and food crops. While secondary data is obtained from local government, related institutions like food agriculture and horticulture agency. The methods used in collecting data are polling, interviews, observation, Focus Group Discussion (FGD) and documentation study.

2.3. The Sampling Technique

The sampling technique are cluster phases. Two cluster phases sampling or more can be separated on population according to certain layers randomly [14] . The sampling technique are as the following below :

- We determine one district that is District of Merauke that is intentionally choosen.
- From that one District we choose five regions within the District of Merauke that is intentionally choosen that is : the region of Merauke City, the region of Muting City, the region Harapan Makmur, the region of Okaba city and rhe region of Kimaam city;
- From those five regions twenty sub-districts were choosen intentionally that is : Merauke sub-district, Nauken Jurai, Semangga, Tanah Miring, Jagebob, Kurik, Animha, Malind, Sota, Kimaam, Tabunji, Waan, Ilwayab, Okaba, Tubang, Ngguti, Kaptel, Muting, Elikobel and Ulilin.
- From those twenty sub-districts we choose intentionally that is Ivim Ahad village Kurik Sub-district
- From one village that is choosen intentionally we determine 120 farmers randomly to be choosen as sample so their perception on the development of special economic region can be observed that is more focused on the development of food agriculture and horticulture.

2.4. Data Analysis

The analysis in this research is the flow model analysis. Superior Selection Model, resource availability Model, correlational,

2.4.1. Rancangan Model Alir Komponen-Komponen Analisis Data (The design of Flow Model of Data Analysis components)

The design of Flow Model of Data Analysis components use descriptive-qualitative analysis, that is conducted by implementing the content analysis technique by data reduction, data *display*, and the withdrawal of conclusion/verification simultaneously [9]. Qualitative Analysis like this is called the flow model analysis. Data reduction is explained as a selection process, concern convergence on simplification, abstraction, and transformation of crude data that emerge from field recording, furthermore the dimension and indicator which is coded, which is eliminated, which is used, which is composited, whish is shorten in order the final conclusion can be withdrawn and verified to let the possibility of coclusion withdrawal. The data serving that is used in the form of *narative text* as the analysis core in this research that is supported with the servings in the form of table and picture.

2.4.2. Model Seleksi Unggulan=MSU (Superior Selection Model)

The engineering of superior selection model of agriculture resource with the aproachment tool Resource Index Method Analysis that is characterized deterministic quantitative that is designed to obtain a comparison value inter variables that is assumed as a deterministic factor of the agriculture development system in the Merauke District. According to the Wikipedia dictionary index is defined as a numeric scale that is used to compare a variable with another variable or with many number reference. Index is also defined as a number that is obtained

from a formula that is used for classifying a set of data. On the superior selection phase agriculture superior resource selection sub model is developed. The Agriculture Superior resource Selection use Agriculture Resource Index method [7]. The designing process of food crop development location index model follow these steps as the following below:

1. Identification of agriculture resource based on their commodity

2. Data tabulation (quantitative) is available for each variable of agriculture resource

3. The value sequencing on the variable data table (from high to low)

4. Value transformation (especially for broad spread of data)

5. The determination of potential rating (Pr) from scale 9 (highest) to 1 (lowest)

6. The determination of Pr value on value/transformation value on each variable

The Development Location Index Value is the addition development location variable index which in this research are :

1. Tanah Miring land vast Index as an availability of land indicator in the strategy of food crop development and horticulture composing.

2. Tanah Kurik land vast Index as an availability of land indicator in the strategy of food crop development and horticulture composing.

3. Semangga land vast Index as an availability of land indicator in the strategy of food crop development and horticulture composing.

4. Malind land vast Index as an availability of land indicator in the strategy of food crop development and horticulture composing.

5. Jagebob land vast Index as an availability of land indicator in the strategy of food crop development and horticulture composing.

6. Merauke land vast Index as an availability of land indicator in the strategy of food crop development and horticulture composing.

7. Elikobel land vast Index as an availability of land indicator in the strategy of food crop development and horticulture composing.

8. Ulilin land vast Index as an availability of land indicator in the strategy of food crop development and horticulture composing.

9. Nauken Jerai land vast Index as an availability of land indicator in the strategy of food crop development and horticulture composing.

Those nine index of food crop development location can be formulated as the following :

$$I_S = \sum_{j=1}^{n} \left(I_{VSj} \right)$$

dengan:

I_S = Indeks Sumberdaya Pertanian (the agriculture resource index)

I_{VS} = Indeks Peubah Sumberdaya Pertanian (the variable agriculture resource index)

n = Jumlah peubah Sumberdaya Pertanian yang ditetapkan (the amount of variable agriculture resource that is determined)

$$I_{VSj} = \left\{ Pr(\rightarrow)VSj \right\}$$

With:

Pr = penetapan nilai potensial rating (determination of potential rating value)

VSj = nilai peubah Sumberdaya Pertanian (the agriculture resource variable value)

$(\rightarrow)$ = pemetaan nilai (value mapping)

$\left\{ Pr(\rightarrow) VSj \right\}$ = nilai pemetaan potensial rating pada nilai peubah Sumberdaya Pertanian

(potential rating mapping value on the variable agriculture resource value)

The Output model is a sequence agriculture superiority rank. The highest on the list is choosen for further studies, in accordance to the development strategy formulation. The superior Justification is based on how high the food crop index value, the higher the value means it is more superior.

The same formula is used for superior ranking of food crop type and horticulture.

The index value of food crop type is the summary of variable index of food crop type that is:

1. Rice crop index as an indicator of the availability of rice crop in the composing of rice crop development strategy

2. Sweet potato crop index as an indicator of the availability of sweet potato crop in the composing of sweet potato crop development strategy

3. Cassava crop index as an indicator of the availability of cassava crop in the composing of cassava crop development strategy

4. Soybean crop index as an indicator of the availability of soybean crop in the composing of soybean crop development strategy

5. Corn crop index as an indicator of the availability of corn crop in the composing of corn crop development strategy

6. Peanut crop index as an indicator of the availability of peanut crop in the composing of peanut crop development strategy

7. Taro crop index as an indicator of the availability of Taro crop in the composing of Taro crop development strategy

8. Gembili crop index as an indicator of the availability of Gembili crop in the composing of Gembili crop development strategy

9. Green beans crop index as an indicator of the availability of green beans crop in the composing of green beans crop development strategy

The Output model is a sequence agriculture superiority rank. The highest on the list is choosen for further studies, in accordance to the development strategy formulation. The superior Justification is based on how high the food crop index value, the higher the value means it is more superior.

2.4.3. Model Analisa Ketersediaan Sumberdaya=MAKS (The Analysis Model of Resource Availability)

The Analysis Model of Resource Availability is the interaction between the avaliability of resources and development focus (alternative of choice strategy) is analyzed using availability matrix model after firstly conducted a criteria determination, expert's opinion survey and field survey toward the study location. A certain resource availability on the whole alternative development strategy can be used as a picture of the Agrobusiness operational readiness that is being studied. In the first step is resource criteria determination [8]. The valuation system in each criteria follows a biner function that is : exist =1, and not exist = 0, therefore the total range of the observation value is the highest 5 and the lowest 0, with the atribute:

Value 5 = available

Value 4 = quite available

Value 3 = less available

Value 2 = very less available

Value 1 = almost not available

Value 0 = not available

The resource availability data from the potential location that is determined as the study location is in the form of resource table. The data on the resource table is further analyzed using the Resource Availability Matrix that can be explained as the following:

A limited Availability Value is The maximum value of the weighted gap that is obtained from the multiplication result of the resource gap value and the development focus weight value.

The Gap value is obtained from the difference between the resource availability maximum value that in this research is 20 with research value total that is coll ected data in the research location. The S Value can be formulated as the following:

$$S = \left[\left(SD\max - \sum_{i=1}^{n} SDi \right) xB \right] \max$$

Explanation :

S = nilai ketersediaan terbatas (limited availability value)

Sdmax = nilai maksimum sumberdaya yang ditetapkan (resource maximum value that is

determined.

$\sum SD_i$ =(total sumberdaya terdata (total collected data resource

B = bobot fokus pengembangan=penilaian pakar (development focus weight=an expert's assessment)

n = tipe sumberdaya (resource type)

2.4.4. Correlation Analysis

Correlation Analysis can be explained as a relation, that is perposed to see the pattern and how close the relation between two or more variables.

The direction of relation between two variables can be separated into (1) *Direct correlation* (*positive correlation*) that is a change in one variable is followed by the other variabel regularly with the same direction, (2) *Inverce correlation* (*negative corelation*) that is a change in one variable is followed by an other variable regularly with the direction opposite (3) *Nihil correlation* that is the direction of relation between the two variable is irregular [15].

3. Result

3.1. Special Economic Region development Zone

Special Economic Region development Zone is designed with a scenario as explained in table 1 as the following below:

Table 1: Index of the land's vastness for the Development Zone

No	Zone	Vastness (acre)	(Pr/Land Vastness)	Rank
1	Agriculture Industry Zone C	38.28	9	1
2	Food agriculture Processing Industry Zone	29.59	8	2
3	Agriculture Industry Zone B	24.39	7	3
4	Agriculture Industry Zone A	18.36	6	4
5	Streat	13.03	5	5
6	Agro Techno Park Zone	11.36	4	6
7	Warehouse Zone	7.33	3	7
8	Trade and service Zone	7.28	2	8
9	Agriculture Production Facility Industry Zone	5.87	1	9

Explanation: Agriculture Industry Zone A (Food Agriculture Processing Block A)

Agriculture Industry Zone B (Food Agriculture Processing Block B)

Agriculture Industry Zone C (Food Agriculture Processing Block C)

3.2. Land Vastness

Based on the data of Food Crop and Horticulture Agency (2016), the vastness of rice field

Now is about 25.450 acre, meaning there is required more rice field as vast as 66.733 acres.

The Salor special economic region development is not only for rice processing industry, but also for other agriculture commodities and the potention is quite big. The land vastness and other commodity production that possess a small superiority potention, even if the potention is big for the development of that commodity that is served in table 2 with the rice crop land vastness in 2015.

If observed from the agriculture superiority crop in the special economic region Salor District of Merauke, then the first sequence is rice and the last sequence is green beans as shown in the following table :

Table 2: Index of Land Vastness for Rice Crop Development location

No	Development Location	Vastness (acre)	(Pr/Land Vastness)	Rank
1	Tanah Miring	6.615	9	1
2	Kurik	5.402	8	2
3	Semangga	4.836	7	3
4	Malind	2.840	6	4
5	Jagebob	1.370	5	5
6	Merauke	1.225	4	6
7	Elikobel	830	3	7
8	Ulilin	590	2	8
9	Nauken Jerai	317	1	9
	Total	24.025		

Source : Food Crop and Horticulture Agency of Merauke District (2016)

Table 3: Index of Superiority Crop and the Vastness Land Development

No	Food Crop Superiority	Vastness (acre)	Pr/Land Vastness	Rank
1	Rice	24.025	9	1
2	Sweet Potato	1.283	**8**	2
3	Cassava	1.061	7	3
4	Soybean	853	6	4
5	Corn	747	5	5
6	Peanut	736	4	6
7	Taro	524	3	7
8	Gembili	293	2	8
9	Green Bean	264	1	9

Source : Food Crop and Horticulture Agency District of Merauke (2016)

The survey result shows that as much as 91.7 percent said that food crop they are planting is rice, while 8.3 percent said that the horticulture crop they plant is Papaya. The determination of feasibility of the Superior Commodity they should plant can be conducted by Superiority Selection Model.Superior Commodity Selection Model with a tool approach Commodity Index Method Analysis that is characterized deterministic quantitative that is designed to obtain a comparison value between variables that is assumed as an deterministic factor of the commodity development system in the special economic region. According to the Wikipedia dictionary

(http://www.wikipediadictionary.com/) the index is defined as a numeric scale that is used to compare a variable with another variable. In the superior selection phase it is developed a commodity superiority selection. Commodity superiority selection uses Food crop Index method as following:

1. Identification of food crop based on their type
2. Data tabulation (quantitative) available for every variable of food crop type
3. The sequencing value on the variable data table (high to low)
4. Value transformation (especially for a broad spread of data)
5. Potential Rating determination (Pr) scale 9 (highest) to 1 (lowest)
6. Pr value determination on the value/transformation value of each variable

Food Crop Type Index value is the summary of food crop type variable index that are in the special economic region that is :

1. Rice crop Index as an indicator of the rice crop availability
2. Corn crop Index as an indicator of the corn crop availability
3. Peanut crop Index as an indicator of the peanut crop availability
4. Cassava crop Index as an indicator of the cassava crop availability
5. Green Bean crop Index as an indicator of the green bean crop availability

The model output is the sequence rank food crop type superior. The highest sequence is choosen for further study, in accordance of composing the development strategy formulation. The superiority justification is based on the index value of the food crop type, the greater the value the more superior as in table 4

Table 4: The respondence answer on the Food Crop they plant

No	Respondence Answer	n	%
1	Rice	116	96,7
2	Corn	4	3,3
3	Peanut	-	
4	Green Bean	-	-
	Total	120	100,0

3.4. Resource Availability Analysis Model

In general a resource is a component from the ecosystem that provides goods or service that is beneficial for the human need and considered as something that possess an economic value [8].A couple resource type that is known are: (1) Natural resource that is a material that can be processed and used for fulfilling the farmers household needs like : agriculture field, livestock, fishery, food and horticulture [8]. (2) human resource that is directed on the role or ability to manage human resource like education and training, and (3) social resource like

farming group, and counseling. The interaction between availability of many resource and development focus (alternative choice strategy) is analyzed using availability matrix model after previously conducted criteria determination, field survey to availability study location. The certain resource availability on the whole alternative special economic region. The development strategy can used as an illustration of resource availability in the amount and quality. The whole availability on the certain strategy alternative can be used as an illustration of resource operational readiness that is studied. The first step is the resource criteria determination. The valueing system of each criteria follow a binary pattern that is available = 1, and not available = 0, therefore the total observation value spread are the highest 2 and the lowest 0, with the atribute :

Value 2 = available

Value 1 = quite available

Value 0 = not available

The society resource availability data in the special economic region is further made into a resource table form. The data in the society resource table is furthermore analyzed using the resource availability matrix like limited availability value Is the maximum value of weighted gap that is obtained from the result of resource gap value multiplication and resource development focus weight value.

This gap value is obtained from the difference society resource availability maximum value in this survey is 20 with a total resource value that is recorded in the location survey that is land, rice, corn, banana, papaya, dairy cow, beef cattle, goat, chicken, gurame fish, gold fish, bandeng fish, mujair fish. Based on the formula above we can make a table to collect data of resource availability in the special economic region.

As mentioned before that the analysis of resource availability model by using availability matrix model, after preliminairly conducted criteria determination, survey on resource availability. The society resource availability data is further made into a table form of resource to know each resource criteria value, thus ease us to determine which resource type that becomes development focus.

The data in the farmers household resource table above, furthermore is analyzed using resource availability matrix. We could see the detail in table 5.

That resource matrix, will give us an illustration of resources available, where that resource quantitatively and qualityly is limited.

The resource available is the gap maximum value that is identified and has been weighted, that is obtained from the multiplication result of the resource gap value that has been collected and resource development focus weight value.

The maximum resource is the summary of resource that is maximum that has been identified on the field, while collected data resource is a resource that is really available on the field. Meanwhile, the development focus is

aimed on real resource that is available that is a resource that has been the development focus. The resource availability and development focus of type of resource is shoen in Table 6.

Table 5: Collected Data Resource and Resource Availability

Collected Data Resource	Resource Availability		
	Available	Quite Available	Not Available
Land for farming :			
Plantation field	=	1	--
Rice field	2	--	-
Food Crop :			
- Rice	2	-	-
- Corn	-	1	-
Horticulture :			
- Banana	2	-	-
- Papaya	-	1	-
- Jack fruit	1	-	-
Farms :			
Pig farm	-	1	-
Goat farm	-	1	-
Cow farm	2	-	-
Buffalo Farm	-	1	-
Chicken Farm	2	-	-
Fishery :			
Gurame Fish	-	1	-
Bandeng Fish	-	1	-
Gold Fish	-	1	-
Mujair Fish	2	-	-
Employment :			
As a farmer	2	-	-
As an employee	-	1	-
As an entrepreneur	-	1	-
As a livestock farmer	-	1	-
As a retailer	-	1	-
Agriculture Counselor :			
PPL	2	-	-
Farmers Group :			
PKK Group	2	1	-
Church Group	2	-	-
Youth Group	2	-	-

Explanation : 2 = Available

1 = Quite Available

0 = not Available

Table 6: Resource Availability and Development Focus

Resource	S	SDmax	SDi	Sdmax-SDi	B	n
Land for farming :						
Plantation field	1					Plantation field
Rice field	2	5	3	5-3	2	Rice field
Moor	1					Moor
Unused land	1					Unused land
Food Crop:						
Rice	2					Rice
Corn	1					Corn
Grains	1	5	3	5-3	2	Grains
Peanuts	1					Peanuts
Horticulture:						
Banana	2					Banana
Papaya	1					Papaya
Decorative plant	1	6	4	6-4	2	Decorative plant
Herbal Plant	1					Herbal Plant
Jack Fruit	1					Jack Fruit
Farms :						
Pig farm	1					Pig farm
Goat farm	1					Goat farm
Cow farm	2	8	6	8-6	2	Cow farm
Buffalo farm	1					Buffalo farm
Chicken farm	1					Chicken farm
Duck	1					Duck
Sheep	1					Sheep
Fishery :						
Gurame Fish	1					Gurame Fish
Milk Fish	1					Milk Fish
Gold Fish	1	7	5	7-5	2	Gold Fish
Tilapia Fish	2					Tilapia Fish
Cat fish	1					Cat fish
Snapper	1					Snapper
Employment :						
As a farmer	2					As a farmer
As an employee	1					As an employee
As an entrepreneur	1					As an entrepreneur
As a civil employee	1	8	6	8-6	2	As a civil employee
As a livestock farmer	1					As a livestock farmer
As a retailer	1					As a retailer
As a fisherman	1					As a fisherman
Counselor:						
Agriculture counselor	2					Agriculture counselor
Agriculture mantri	1	4	2	4-2	2	Agriculture mantri
Private Counselor	1					Private Counselor
Farmer Group :						
PKK Group	1					PKK Group
P3K Group	1					P3K Group
Church Group	2	5	3	5-3	2	Church Group
Youth Group	1					Youth Group

3.5. Flow Model of Data Analysis Components

Flow model of Data Analysis components in the special economis region are :

3.5.1. Farm Work

The survey result shows that as much as 94,1 percent desires to do food crop work and 5,9 percent desires to do horticulture crop work. The main problem that is studied in the food crop and horticulture work are there is not a determination of the right superior commodity to maximize that potention thus becomes a business and commercial activity that is competitive. The reality that the superior product strategy in the special economic region has never been conducted the superior commodity development strategy as a *leading sector* in the special economic region. In the special economic region location is a region that possess a geographic advantage as one of the gate door in East Indonesia to the international region (global market accessibility), besides the agronomic advantage with a few agriculture commodity therefore it is considered very important to optimize the food and horticulture work. The food and horticulture work development in accordance to *E-community Service,* that the core idea is to increase the society's welfare. The purpose is to increase the product in the food and horticulture crop by preparing a region that has a geoeconomic and geostrategic advantage, to optimize food and horticulture work activity that has a high economic value. Therefore the target that is accomplished is the food and horticulture production that have a food crop and horticulture crop production advantage. To reach that purpose and target therefore the approach conducted to seize the society's awareness in the special economic region are the micro, *mezzo* and developmental approach. [1] explains the approach way that must determineand must be folllowed by all parties in the related system (*the style of action within a system*) [13] put forward that whatever approach that will be conducted must considered the purpose that they want to achieve in the food and horticulture work, the technology transfer system for food crop and horticulture development, the human resource development in the food crop and horticulture work.

Table 7: The respondence answer to the Crop they work on

No	Respondence Answer	n	%
1	Food crop work	110	91,7
2	Horticulture work	10	8,3
		120	100,0

3.5.2. Work Land Vastness Ownership

According to the identification result of the land ownership we obtain an information that as much as 37,5 percent own a work land vastness under 1 acres, while as much as 46,7 percent own a work land 1 acres, while as much as 9,2 percent own a work land 5 acres and as much as 0,8 percent also own a work land 500 acres. From the following table below we also obtained an information that besides the ulayat rights and the personal ownership as much as 5,9 percent, the others status are cultivators, that cultivate the land from the tribe's chief. They are given a work land to be cultivated and the harvest can be consumed by themselves without profit sharing we can see in detail in the following table below

Table 8: The Respondence Answer on the work land vastness ownership

No	Respondence Answer	n	%
1	Work Land Vastness Ownership under 1 acre	45	37,5
2	Work Land Vastness Ownership 1 acre	56	46,7
3	Work Land Vastness Ownership 5 acres	11	9,2
4	Work Land Vastness Ownership 10 Acres	7	5,8
5	Work Land Vastness Ownership 500 Acres	1	0,8
	Total	120	100,0

3.5.3. Work Land Ownership Type

The Survey result shows that as much as 47,5 percent are personal ownership, while 10,8 percent the tribe ownership. Meanwhile as much as 41,6 percent as ulayat ownership. Hence while the majority land ownership is still under the ulayat right rulership region, then the profit sharing system is not applicable in this ownership, and also the transaction system on selling-buying land is forbidden because the land belongs to the ulayat (tribe chief). We can see in detail in the following table :

Table 9: The Respondence Answer on the work land Ownership Type

No	Respondence Answer	n	%
1	Personal Ownership	57	47,5
2	Tribe group Ownership	13	10,8
3	Ulayat Ownership	50	41,6
	Total	120	100,0

3.5.4. The Land Donation for Special Economic Region

The survey result shows that as much as 5,0 percent of their land is donated for the special economic region development, while as much as 11,6 percent of their land has been given for the special economic region development, while as much as 83,3 percent, if their land is bought for the special economic region development. The society's expectation is if their land is donated to the stakeholders with the return that they can work as an employee (35.3 percent), while the rest 35.3 percent hopes their children can get a scholarship from elementary school to College. If the land is donated to the stakeholders then the land owner's wish is an even profit sharing (50/50) between the ulayat right owners and the stakeholders, while the cultivator does not have the right to determine the profit sharing transaction. But if the land is bought then the price is Rp. 100.000/M^2. The survey result shows that as much as 94,1 percent as a cultivator, and 5,9 percent as the ulayat ownership.

Table 10: The Respondence Answer on the Land Donation for the Special Economic Region

No	Respondence Answer	n	%
1	The land is donated for the special economic region development	6	5,0
2	The land is Given for the special economic region development	14	11,6
3	The land is bought for the special economic region development	100	83,3
	Total	120	100,0

3.5.5. The Factors that Take Effect to the Food Crop Cultivation

To see the size of correlation coefficient we can use t value testing (*t-value*). The greater the correlation coefficient then the indicator is more solid. We can see completely on the analysis result as the following below:

Interpretation

Model Summary

Table 11

Model	R	R Square	Adjusted R Square	Std Error of the Estimate
1	545[a]	297	285	235

In the table above we can see that the correlation coefficient value (R) as much as 0,545 shows that the relation is very strong. The determination coefficient (R^2) as much as 0,285 means the size variation of the production amount 28,5% is caused by the land vastness dan the land ownership. Only 71,5% of the variation is unknown.

Adjusted R Square is a correction from R^2 thus the illustration is more close to the population model trial quality. R^2 square is formulated as the following below :

$$Adjusted\ R^2 = 1-(1-R^2)(\ \underline{n\text{-}1}\ )$$

$$n\text{-}1$$

Where

n = amount of sample

k = amount of parameter

$$Adjusted\ R^2 = 1-(1-0{,}285(\ \underline{120 - 1}\ ) = 0{,}545$$

$$120 - 3$$

ANOVA[b]

Table 12

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	2.719	2	1.360	24.674	.000[a]
Residual	6.447	117	.055		
Total	9.167	119			

a.   Predictors : (Constant), land vastness, ownership

24b.   Dependant Variable:

Production

From the Anova table above we can see that F_{hitung} value 24,674. F_{table} 0,05 (2;117) is 3,07. Because F_{hitung} is greater than F_{table} or seeing the probability (Sig) thatis maller than the signification level(0,000<0,05) therefore we can conclude that the equation model $Y = a + b_1X_1 + b_2X_2$ that is proposed can be accepted.

Coefficients[a]

Table 13

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
1 (Constant)	.867	.043		20.001	.000
Ownership	.003	.001	.428	5.419	.000
Land vastness	1.612E-7	.000	.265	3.350	.001

a.   Dependent Variable: Production

With the coefficients table above the t test is conducted to test the regression Coefficients significance from each independent variable.

Hipotesis:

Ho = free variable that does not really effect to the constrained variable

Ha = free variable that really effect to the constrained variable

Decision making :

If $-t_{table} < t_{hitung} < t_{table}$ then Ho is accepted

If $t_{hitung} < -t_{table}$ atau $t_{hitung} > t_{table}$ then Ho is rejected

Decission:

t_{table}

t 0,05 with the free degree (n-k)

Where:

n = sample amount = 120

k = free variable amount and the constraint variable = 3

because the test is conducted two sided then the t_{table} with the alpha 0,025

t(0,025;117)=1,658

t_{hitung} for the land ownership variable 5,419

Because $t_{hitung} > t_{table}$ therefore Ho is rejected, this meansthe effectof land ownership to the significant rice production
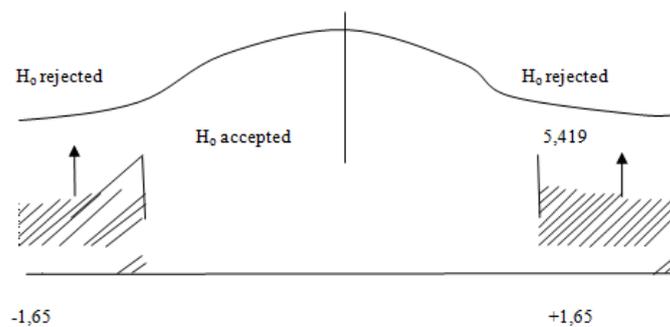
Figure 2

T_{hitung} for land vastness variable 3.350

Because $t_{hitung} > t_{table}$ then Ho is rejected, this mean land vastness effect to the rice production is significant.
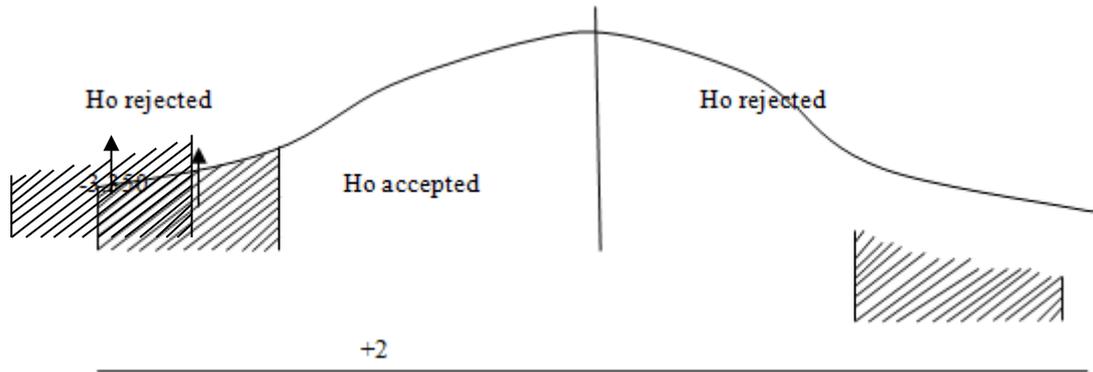
Figure 3

With the backward method the variable that is not significant will be eliminated, but the effect all the significant variable there is not a variable that is eliminated from the equation.

The equation :

$Y = 0,867 + 0,003X_1 + 1.612E\text{-}7X_2$

Where :

Y = rice production

X_1 = land ownership

X_2 = land vastness

The equation above can be developed into three regression model that is owned by personal ownership (code1)

$Y = 0,867 + 0,003X_1(1) + 1.612E\text{-}7X_2$

$Y = 0,87 + 1.612E\text{-}7X_2$

-Tribe Ownership (Code2)

$Y = 0,867 + 0,003X_1(2) + 1.612E\text{-}7X_2$

$Y = 0,0873 + 1.612E\text{-}7X_2$

- - Ulayat Ownership (Code3)
- Y=0,867 +0,003X$_1$(3) + 1.612E-7X$_2$
- Y=0,876 + 1,612E-7X$_2$
-

4. Discussion

4.1. Land Requirment

The special economic region development requires raw material support from the hinterland region, especially from the own Kurik District, Malind, Jagebob, Semangga and Tanah Miring.If the whole special economic region is used for agriculture processing industry as vast as 110,62 acres is multiplied with 25 ton milled dry grain (GKG) per day as much as 2.765,5 ton. If in one year, it is assumed that work time is 300 day, then in one year it requires grain as much as 829.650 ton GKG or equal with 497.700 ton of rice with 15-20 percent of *broken rice* or 423.120-448.011 ton of premium rice with 5 percent of *broken rice*, if the whole rice is converted into premium rice. If the converted rice become premium rice is only 40 percent, then the premium rice production is only between 169,249 ton to 178.204 ton with total production range between 467.923 ton to 477.878 ton. But if the premium rice production is increased to 50 percent, in order to export to the outer region of Merauke, both domestic or abroad, then the premium rice production range between 211.561 ton to 224.006 ton, with the total rice production range between 460.456 ton to 472.901 ton. The higher the percentage of premium rice the larger amount of *broken rice* that is wasted,but the rice price is more higher. These broken rice is not really wasted because it can be used for other use, for example it can be used for rice powder and many others. If assumed the rice field productivity in Merauke District as much as 4,5 tonGKG/acre/season and in one year it can be cultivated 2 times (Cultivation Index-IP = 200), then the rice field productivity in the District of Merauke as much as 9,0 ton GKG/acre/year. Thus to support the special economic regin Salor requires rice field minimum as vast as 92.183 acre of rice field.

This region is plotted for wet land food crop where the irrigation can be obtained naturally or by technique. The wet land crop type that can be developed in the District of Merauke is the food crop agriculture. The region that is suitable for wet land food crop are the ones that possess an irrigation development potention or system that have an elevation < 1000 m, slope < 40% and effective top soil layer depth > 30 cm.

The arrangement of this wet land food crop agriculture region is as follow: the maintainance of water resource to maintain the existance of water ecosystem, and controling the village and other cultures. The plan of allocation of wet land food crop region in the District of Merauke is spread in the Sub-district of Animha, Ilwayab, Jagebob, Kaptel, Kimaam, Kurik, Malind, Muting, Ngguti, Okaba, Sota, Tabonji, Tanah Miring, Tubang and Ulilin. Meanwhile, for the dry land food crop region are : the region that does not possess a system/irrigation development potention and has an elevation < 1.000 m, slope < 40%, and soil layer effective depth > 30 cm. The arrangement of this region is as the following below:

- The development and increasment of horticulture and fruits

- Maintaining the existing hard crop.
- The cultivation of horticultural and vegetables >8% needs to refer to Decreet of Agriculture Minister No. 175/Kpts/RC-200/4/1997

Meanwhile the instruction of spacial utility for dry land food crop in the District of Merauke is spread in the sub-District Animha, Elikobel, Ilwayab, Kimaam, Kurik, Malind, Ngguti, Okaba, Semangga, Tabonji, Tanah Miring, Tubang and Waan.

4.2. Irrigation Needs

To increase the production productivity requires natural resource that is natural material that can be processed and used to fulfill human needs like water. The development of infrastructure and structure network of raw water and the irrigation infrastructure in the future in the District of Merauke will be very related with the management, and development and the River Catchment Area potention development Einlanden-Digul-Buraka-Bikuma and must be sinkronized with the development of residential system. The water requirement for rice field irrigation can be obtained from the rivers that flow through a couple of District. From the vastness development plan of the wet land agriculture (rice field) with a planned vastness about 486.931,63 acres can be supplied by irrigation water as much as 504.541litre/second (standard clean water requirement 1 litre/second/acre, The development of irrigation network for the sake of wet land agriculture irrigation is by prioritizing produktif rice field land and planning a network according to the rice field blue print plan on the potential land.

4.3. Education and Training

The approach that is used in this development of special economic region is BLK. and SMK. Work Training Institution (BLK= Balai Latihan Kerja) and Technical Middle School (SMK=Sekolah Menengah Kejuruan is an institution that has a role to educate the local society especially the native society to obtain a knowledge that is technical and skill, so they are ready to be used. Meaning that with the technical knowledge and skill that they possess they can access jobs that are developed in the special economic region or if they have not got a job in the special economic region they can use their knowledge that they obtained from BLK to open their own business. Furthermore for the foundation of formal institution like SMK, it is meant to open faculties that can anticipate if there is a company or government that open a job recruitment that needs graduates from the faculty from SMK, so they don't have to recruite fresh graduate from SMK from outside the area. Because the mission of the opening of SMK are that the student are educated to be ready for work, while if an SMA is opened with the mission to continue their study to college.The survey results shows that as much as 100 percent said that they agree with the local society involvement in the BLK activity, while 100 percent also said they agree to open a faculty in SMK, but the faculty that is opened must antisipate the job opportunity that will be opened in the special economic region. The human resource development by BLK,is directed to the cognition of human role that is related with the ability to manage food crop. According to Siagian (2006) the approach to human resource is multidimensional. In the food agriculture activity the availability of human resource is more directed to the availability of skillfull workers/professional that is supported with programs/education facility and

training. Therfore the approach that is required to be used are as the following:

a. Micro approach that is conducted to local society (the beneficiary) individually by teaching, conseling. The main purpose is to teach or totrain the society (beneficiary) in cultivating food crop and horticulture. This model ia often called as a *task centered approach.*

b. Mezzo approach is conducted to the farmer group (beneficiary). The empowerment is conducted using farmer group as a media to conduct education and training of food crop and horticulture work, farmer group dynamics, as a strategy to increase their awareness, knowledge, skill, and the farmer society'a attitude(beneficiary) so they have the ability to conduct, to solve problems of food crop and horticulture work that they are doing.

c. Developmental approach (development) tries to explain the steps of food crop and horticulture activity with trying to design a survey model (observation, interviews, and FGD). The output is the food crop and horticulture work development strategy model design in the special economic region based on the region superior crop in increasing their welfare.

4.4. The Marketing of the Agriculture Harvest

The survey result shows that as much as 100 percent said the government must facilitate the marketing by building network and searching for entrepreneurs that can build a processing industry. It is realized that the land near the special economic region is very potential to cultivate food nd horticulture commodity, but the marketing network is difficult to obtain thus the production is only selled in local market and not quite profitable, and is much more for their consumption only. That is why it is required to form :

1. Badan Usaha Milik Desa (BUMD) = Village Work Council and
2. Lembaga Keuangan Mikro (LKM) = Micro Financial Institution

Because the farmers have a difficulty in marketing their product and accessing capital loan from the bank, then the farmers want the existance of BUMD and LKM. The farmers that have a land certificate will easily borrow capital loan from the bank, while the farmer that does not have land certificate will find it difficult to borrow capital loan from the bank. Therefore the farmers hope for the existance of BUMD and LKM. BUMD is formed in every village, and have LKM with the intention that every farmers are a member in this BUMD, therefore when any farmer want to market their product must be by BUMD. The purpose is that if any farmer individually want to market their product to the center market it will certainly cost them a lot more, rather than if all farmers collect their product and then delegate a person they trust to bring all of member of BUMD product to be selled in the sub-District, District or province market etc. Therefore it is more efficient, effective, economic and profitable. Furthermore, if there is a farmer that have a work land and is short in work capital, while he have a difficulty to borrow capital loan from the bank, then the solution is the farmer can borrow work capital by LKM, and the guarantee is by signing a letter of the loan with the guarantee that after harvesting, then the harvest that is sold by the trusted person is automatically deducted by the LKM officer according to the agreement letter. Therfore, the farmer to obtain work capital and he also can sell his product easily. The society responce to the existance of BUMD and LKM is very positive according to the survey result that shows that as much as 100

percent farmers want the existance of BUMD and LKM in their village.

5. Conclusion

The conclusion that can be withdrawn from this research is :

a. The special economic region is divided into Food Agriculture Processing Industry Zone, Agriculture Production Facility Industry Zone, Warehouse Zone, Agro Techno Park Zone that include Laboratorium, Green House and Experiment Garden, Trade and service Zone, Office Zone, Education and Training Zone, Development and improvement of road;

b. Special economic Region have a land that is totally owned by the government, for processing industry,production facility industry, and food logistic base on rice, corn, soy bean, sweet potato, cassava, peanut and horticulture.

c. The determination of the feasibility of Superior food crop cultivation can be conducted by the Superiority Selection Model, with the analysis tool approach Commodity Index method that is deterministic quantitative that is designed to obtain a comparison value inter variable that isassumed as a deterministic factor of the food crop development system in the special economic zone.

d. The availability of resource that in this research is 20 type of agriculture resource that consist of : plantation, rice field, rice, corn, banana, papaya, jack fruit, pig, goat, cow, buffalo, chicken, duck, sheep, gurame fish, milk fish, gold fish,mujair fish, cat fish, snapper.

Acknowledgement

References

[1] Axinn, G.H, 1988. Guide on Alternative Extension Approaches. Publisher Kompas Book Jakarta

[2] Boseman G, and Phatax A,1989.Strategic Management 2nd edition,John Wiley & Sons

[3] Boedisetio, 2014 Evaluation Report Book RPJMD Tegal District, Gramedia Jakarta

[4] Chandler, 1982.Strategy and Structure Chapters in the History of American Industrial Enterprise Chambridge : The MIT Press

[5] David FR, 2002. Concepts of Strategic Management in the strategic aliance Translator : Alexander S. PT. Prenhallindo and Pearson Education Asia Pte. Ltd. Jakarta

[5] Dirgantoro C, 2001. Strategic Management: Concept, case and Implementation.PT Gramedia Jakarta

[6] Eriyatno dan Sofyar, 2003. Ilmu Sistem. Meningkatkan Mutu dan Efektivitas   Managemen.Bogor:IPB Press

[7] Fauzy Akhmad, 2004. Natural Resource Economy and Environment PT. Gramedia   Pustaka Utama Jakarta

[8] Huberman. A.M. & Miles. M.B. 1992. Qualitative Data Analysis. Publisher Universitas Indonesia, Jakarta

[9] Learned, Christensen, Andrews, Guth 1965 Business Policy: Text and Cases Homewood: Richard D.Irwin

[10] Lea E, et al. 2006. Strategy Management: An Analytical Introduction Blackwell Publishing

[11] McNamee PB, 1992 Strategy Management Oxford Butterworth-Heinemann Ltd

[12] NagelSlack M, L, 1997 Operation Strategy Publisher FT. Prentice Hall

[13] Palte J.G.L, 1978. Social Economic Research Method (especially Survey) Stencil Lecture Note

[14] Pratisto, A, 2004. The easy way to overcome Statistic Problem and Experiment design SPSS 12. PT. Elex Media Komputindo Jakarta

[15] Siagian SP, 2006 Human Resource Management, PT. Bumi Aksara, Jakarta

[16] Shrivastava P, 1994   Strategic Management Concepts & Practices   Cincinnati Ohio-South Western Publishing Co

[17] Saragih,B. 2000. Agribisnis Berbasis Peternakan, Bogor, Pustaka Wirausaha Muda