

STRATEGY OF INCREASING THE SELF RELIANCE OF BESUKI NA-OOGST TOBACCO FARMERS IN ADAPTING TO THE CLIMATE CHANGE

Hesti Herminingsih

Mathematics and Natural Sciences Faculty, Open University, Jember, Indonesia

email: hestih@ecampus.ut.ac.id

Abstract

This study aims to determine 1) Self reliance of Besuki Na-Oogst tobacco farmers in adapting to climate change. 2) Strategy to increase the self reliance of Na-oogst tobacco farmers in adapting to climate change. The research area determination is conducted purposely in Tanjungrejo, Wuluhan, Jember on the basis of consideration. The research method is using descriptive and analytical. The sampling technique used is Purposive Sampling. The samples is obtained by calculating (20%) of each population of farmers applying Good Tobacco Practice (GTP) of 80 people and who do not apply GTP of 110 people. Based on the calculation results, it is obtained a sample of 18 people applying GTP and 22 people who do not apply GTP. The method of data analysis used is descriptive analysis. Formulation of self reliance improvement strategy is using SWOT analysis (Strength, Weakness, Opportunity, Threat). The results shows that 1) Indicator of self-reliance of farmers which include: a) Obtaining 43% credit loans in banking. b) Participation level in agricultural extension; 22% Present; 55% rare and 18% absent. c) Identifying the phenomenon of climate change 100%. d) Adaptation measures already undertaken (80% improvement of irrigation techniques, 20% improvement in soil processing techniques, 60% planting time change and 80% pest prevention techniques). 2) Based on the results of SWOT analysis is obtained IFAS score of 2.80 and EFAS is 2.9 so by using the matrix model of Internal External Wheelen Hunger can be determined the position of the strategy in the growth zone with the concentration strategy through horizontal integration.

Keywords: climate change, farmer tobacco, self reliance, tobacco, strategy adaptation .

BACKGROUND

Besuki Na-Oogst Tobacco is the main raw material of export quality cigars. Tobacco Besuki Na-Oogst has a strategic role for the economy in Jember District. Farmers need to be aware and care pro-actively and independently of all environmental changes that can affect the growth of tobacco plants. This aims to ensure the quality and quality of tobacco leaves are guaranteed and excellent. Unpredictable weather and climate changes affect the decline in production and quality of tobacco. Climate change in question includes extreme rainfall, mountain dust erupts and other natural phenomena. Therefore, the adaptation of farmers to natural events such as climate change is important in the management of tobacco farming.

Keywords to answer the challenge of climate change is to increase the self reliance of farmers through groups of joint farming so that negative impacts due to climate conditions that are not conducive can be anticipated and reduced. This means that farmers must be conditioned to be more resilient and tough to face climate change.

Research conducted by Kurniawati (2012) showed that basically every farmer had the ability to adapt with different levels of each other. Farmers' adaptive capacity is influenced by non-climatic and resources factors such as information access, the land distance to the place of market, knowledge, education, skills, networks and social capital, income and wealth. Easy

access to information will help farmers improve their ability to adapt to climate change. High knowledge, education and skills will increase the chances of successful adaptation of farmers. Adaptability of farmers will affect all effective actions taken in facing the climate change.

A review by Akponikpe (2010) shows that planting time adjustment was the easiest and most efficient strategy compared to soil conservation that technically required greater capital both in terms of cost and labor. Although this is the easiest way and shortest time of adaptation step, there are not many farmers in the research areas that implemented it. This condition certainly required special attention from the government. Farmers needed to be equipped with the knowledge and skills to realize that adaptation to climate change was an absolute necessity to be done for the sustainability of tobacco farming.

According to Santoso (2009) that several types of tobacco had been made cultivation guidance in the form of Good Tobacco Practices (Good Tobacco Practices = GTP), while for tobacco types in other specific areas had not been made. The matters associated with GTP include. 1) Preparation of planting. 2) Planting schedule and 3) Fertilization.

In preparation for planting, there were few things to note include: a) Not burning former crops, in cultivated fields. b) Doing terracing on slopes or on mountain land. c) Making drainage is done by adjusting local conditions. e) Doing Soil treatment is done to create a suitable soil structure for the growth of tobacco plants. f) Carrying out the land grid if there is rain with more intensity.

Planting schedule is one of the important aspects in adapting to global climate change. Here are some things needed to maintain the existence of tobacco cultivation, for that to be expected: 1) All interested parties to learn about global climate change. 2) Organize and formulate adaptation patterns to determine early warning systems. 3) Collaboration between Tobacco Institution, BMG, Balittas, Disbun and related parties, to prepare, adaptation steps. 4) Conduct trainings to adapt to global climate change. 5) The tobacco planting schedule is tailored to the quality and timing desired by the market. 6). The planting schedule is adjusted to weather forecasts as well as the nature of the local climate. 7). Planting schedule adjusted to water availability.

Provision of fertilizer on tobacco plants intended to meet the lack of soil nutrients. Some matters that need to note include: 1) Fertilization of tobacco plants based on soil analysis (soil and soil chemistry), weather / climate change, research results, soil processing and local experience. 2) Fertilization is done based on quality goals desired by consumers. 3) N fertilization is done gradually in accordance with plant growth. 4) Fertilization is not done excessively in order not to damage the soil, water and tobacco quality. 5) Organic fertilization can be done on the land in need and still keep the target quality that the market wants. 6). Liming is done to adjust the soil pH according to the tobacco type.

Based on the result of deductive activity on the level of self-reliance of farmers (farmer autonomy), Sumardjo (1999) suggests that independent farmers are farmers who are fully able to choose and direct the farming activities in accordance with his own will, which is believed to be the most useful, But humbly accept the situation of society and the rules that are in it. The motives of his behavior stem from all the realities of life. Thus an independent farmer is a farmer who in an effort to improve his or her quality of life (the welfare of his family and community) is not only dependent on the instructions of the extension officer, the apparatus or other parties, but rather rely on the ability to make his own decisions appropriately and his own power driven by his motivation to improve the quality of his life.

According to Agussabti (2002), three important factors affecting the level of self-sufficiency of farmers are: awareness of their needs; Individual characteristics (achievement motivation, perceptions of innovation, courage to take risks, creativity) and farmers access to information. Mulyandari, (2001) in Saepudin (2014) states that the self reliance of farmers in practical business can be seen in various aspects, namely the ability to choose the type of commodity cultivated, the determination of commodity prices produced, access to agricultural production facilities, the ability to work together, To seek information and knowledge in the business

This study aims to 1) provide descriptive description of adaptation of Besuki Na-Oogst tobacco farmers in the face of climate change. 2) analyze and develop strategies to increase the self reliance of Besuki Na-oogst tobacco farmers in adapting to climate change. The benefits of this study are as reference materials and information, especially for farmers who want to further improve their self reliance in tobacco cultivation in adapting to weather changes.

METHODS

The research area was determined purposively in Tanjungejo. Based on the consideration, Tanjungejo is one of Na-Oogst tobacco centers in Jember. Sampling method obtained with calculation (20%) from each population that is farmer applying GTP counted 80 people and who do not apply GTP counted 110 people. Thus can be calculated the number of samples to be taken is 18 people who apply GTP and 22 people who do not apply GTP. So the total sample is 40 respondents from the total population of 190 farmers. Data analysis method used to describe the self reliance of farmers is percentage. As for the strategy of increasing the self reliance of farmers of Na-oogst tobacco farmers used SWOT analysis (Strength, Weakness, Opportunity, Threat).

According to Rangkuti (2006), Stages of SWOT analysis in preparing the strategy, that is compile first internal factor analysis (IFAS) consisting of strength and weakness as well as external factor analysis (Internal Factor Analysis Summary / EFAS) consisting of opportunities (Opportunity) and threat (threat).

Table 1. Overview of Internal Strategic Factor Analysis (IFAS)

Internal Strategic Factor	quality	rating	Grade
Strenght			
S1			
S2 Etc			
Weakness			
W1			
W2 ... etc			
Total			

Source : Rangkuti, 2006

Table 2. Overview of External Strategic Factor Analysis (EFAS)

External Strategic Factor	quality	rating	Grade
Change			
O1			
O2 ... etc			
Threat			
T1			
T2 ... etc			
Jumlah			

Source : Rangkuti, 2006

Information :

- a) Determine the factors that become strength (Strength), Weakness (Weakness), Opportunity (Opportunity) and Threats (Threats).
- b) Value assignment of each factor with a scale ranging from 1.0 (most important) to 0.0 (not important), based on the influence of these factors on the company's strategic position.
- c) Calculate the rating for each strength and opportunity factor by giving a scale ranging from 4 (outstanding) to 1 (poor). While the rating of weaknesses and threats is the opposite, with the following criteria: The variables included in the (positive) strength category are rated from 1 (not strong) to 4 (very strong)

1 = not strong	3 = strong
2 = strong enough	4 = very strong
- d) The variables included in the weakness category (negative) are rated from 1 (not strong) to 4 (very strong)

1 = very weak	3 = weak enough
2 = weak	4 = not weak
- e) The variables included in the (positive) opportunity category are rated from 1 (not strong) to 4 (very strong)

1 = no chance	3 = have chance
2 = have a chance enough	4 = have a big chance
- f) The variables included in the (positive) threat category are rated from 1 (not strong) to 4 (very strong).

1 = very threatening	3 = threatening enough
2 = threatening	4 = no threatening
- g) Multiply each weight by rating to obtain the result of the weighting factor in the value column. The result is a weighted score for each factor whose value varies from 4.0 to 1.0.
- h) Increase the weighting score to get the total weighting score of the company in question.
- i) Based on the calculation of the value of internal condition factors and the value of external condition factors on Bes-NO tobacco farming can be compiled into the relative competitive position matrix of Besuki Na Oogts tobacco farming shown in table 3 below

Table 3. Wheelen Hunger Matrix Internal External Model

EFAS IFAS	High (Score 3-4)	Medium (Score 2-3)	Low (Score 1-2)
High (Score 3-4)	<i>Growth</i> Concentration through vertical integration	<i>Growth</i> Concentration through horizontal integration	<i>Retrenchment</i> <i>Turn around strategy</i>
Medium (Score 2-3)	<i>Stability</i>	<i>Growth</i> Concentration through horizontal integration	<i>Retrenchment</i> Divestment Strategy
Low (Score 1-2)	<i>Growth</i> Concentric Diversification	<i>Growth</i> Diversified conglomerate	<i>Liquidity</i>

Source : Ranguti, 2006

RESULT AND DISCUSSION

The Self reliance of Bes-NO Tobacco Farmers in Adapting to Climate Change in Tanjungrejo Wuluhan Jember

According to Effendi, (2012), the self reliance of farmers to realize the toughness of farming is a condition that can be grown through the process of empowerment (empowerment). Empowerment towards the self reliance of farmers can be realized through extension activities. Farmers need to be actively involved in the learning process in order to

be able to identify the problems at hand and to decide for themselves alternatives to overcome them.

Weather changes that occur especially in Tanjungrejo very demanding self reliance of farmers. A high level of farmer self reliance will provide a greater opportunity for farmers' success to adapt to climate change. In detail the degree of self reliance of farmers in Tanjungrejo in adapting to climate change can be shown in Table 4 below.

Table 4 Level of Self reliance of Bes-NO Tobacco Farmers in Tanjungrejo

No	Indicator	Result (%)
1.	Business loans to Financial Institutions	No 57% Yes 43%
2.	Intensity follows counseling	No 18% Seldom 55% Often 22%
3.	Knowledge of climate / climate change	Know 100%
4.	Adaptation Efforts	
	Improving irrigation techniques	No 20% Yes 80%
	Improving soil processing techniques	No 80% Yes 20%
	Change of planting time	No 40% Yes 60%
	Improving pest prevention techniques	No 20% Yes 80%

Source: Primary Data 2016, Processed

Based on Table 4 it can be seen that there are 4 indicators to know about the picture of self reliance of Bes-NO farmers in Tanjungrejo. The first indicator is the ability of farmers to meet the needs of farming capital independently without any help from outside parties. The results showed that 57% of farmers said they never asked for help from financial institutions / banks to meet their capital requirement. The reason is that the profit of Bes-NO is sufficient to provide capital for the next planting season. If you see the value of R / C Ratio is high enough that the 3.6 reason is very reasonable. High profit makes farmers able to meet the needs of households as well as set aside for capital needs.

The second indicator is the intensity of farmers in following the extension activities both organized by the Plantation Office of Jember and other agencies. The results obtained are 18% of farmers admitted never the same, 55% rare and 22% of farmers admitted often follow the extension activities. The livelihood of farmers following the extension activities is very important in supporting the success of tobacco farming. Counseling is one of informal media for farmers to gain knowledge, especially practical knowledge related to tobacco farming.

The third indicator is farmers' knowledge of the weather changes that occurred in Tanjungrejo. The results showed that all of 100% of farmers who became respondents know of the weather changes that occurred in Tanjungrejo. The frequent weather changing are continuous rain.

The fourth indicator is the efforts made by farmers in overcoming the impact of climate change. There are 4 (four) efforts that become the focus in this research that is, improvement effort of irrigation technique, soil processing technique, change of plant time and improvement of pest control technique. Based on the result of the research, the number of farmers doing the adaptation effort through the irrigation technique improvement is 80%, the soil processing technique is 20%, the change of plant time is 60% and the improvement of the pest control technique 80%. From these results can be concluded that most farmers make efforts to adaptation by improving techniques of irrigation and pest control. As explained in the previous discussion that some farmers declare the tobacco planting season in 2016 is more often colored with high rainfall. Based on the results of interviews all respondents

(100%) stated that during the rainy season this year the rain season is much longer than the previous year but nevertheless, the temperature conditions during the day far away if it does not rain much hotter than the temperature in general.

According to Hartana in Djajadi (2008) high rainfall is needed by Bes-NO tobacco to wash adhesive substances and secretion salts attached to the leaf surface. However, these advantages carry the consequences of high pest and puddle attacks on tobacco plants. So that the effort of handling good watering technique and pest control is needed. This is the cause, most farmers are more focused on these two things. This is in accordance with the results of research conducted by Djajadi (2008) which gives results that the topographic condition of the land and the magnitude of rainfall in South Jember will affect the different agroecological characteristics that determine the tobacco production and high quality. As an area that has the potential to produce high quality (the quality of bandages and cigar / deck-omblad wrapping).

Strategy for Increasing Self reliance of Bes-NO Tobacco Farmer Farmer in Adapting to Weather Changes in Tanjungrejo Wuluhan Jember

Bes-NO tobacco farming in Tanjungrejo is one of the developed businesses and can increase farmers' income. With the recent erratic weather changes, it is necessary to have a strategy to increase the farmers' self-reliance in adapting to the weather changes. The strategy is done by comparing the internal and external factors that exist, the positioning of Bes-NO tobacco farming system is analyzed using SWOT Analysis.

A. Internal Environment Aspect

Internal strategy factor analysis consists of strength (Strengths) and weakness (Weakness). There are 3 strength variables that exist in Bes-NO tobacco farming is the use of superior varieties, the selling price is high enough, access capital is quite good. Weaknesses are the limitations of existing resources and the ability of Bes-NO tobacco farming. There are 5 variables which consist of lack of proper implementation of Good Tobacco Practice (GTP), simple cultivation technology, limited farming land, selling price determined by middleman and high production cost.

Overview of internal factors analysis in Besuki Na Oogst tobacco development strategy in Tanjungrejo Wuluhan Jember can be seen in table 4 below;

Table 4 Overview of Internal Strategic Factor Analysis (IFAS)

Internal Strategy Factors	Quality	Level	Grade
Strength			
Use of improved varieties (S1)	0,1	4	0,4
Selling price is quite high (S2)	0,1	1	0,1
Good capital access (S3)	0,1	3	0,3
Weakness			
Lack of proper implementation of Good Tobbaco Practice (GTP) (W1)	0,2	3	0,6
Cultivation technology is still simple (W2)	0,1	1	0,1
Limited farming land (W3)	0,1	2	0,2
The selling price determined by the middleman (W4)	0,2	4	0,8
High enough Production Cost (W5)	0,1	3	0,3
Total	1,00		2,8

Source: Processed Primary Data, 2016

1. Improved Variety (S1)

Bes-NO tobacco farmers in Tanjungrejo always strive to develop tobacco farming by maintaining good quality production. One effort is to always use superior varieties of tobacco

seeds, varieties used by farmers in Tanjungrejo is H382 / H8 varieties. Variant H382 produces more leaves than other varieties, resistant to pests and diseases.

2. High Selling Price (S2)

Jember is famous for Bes-NO tobacco. The tobacco leaves produced in Jember are suitable for use as pads, binders or wrappers, even cigar fillers. Jember tobacco is used mainly for cigar pads (dekblad) as well as binders and fillers of quality cigars. This is what makes Bes-NO tobacco has a high enough selling price when compared with other types of tobacco such as Kasturi. In Tanjungrejo the dry tobacco selling price is also quite high. Based on interviews with farmers, for the harvest season of 2016 the price of good quality tobacco is in the range of Rp 500.000 / kg s.d. Rp 700.000 / kg, while for the low quality is in the range of Rp 270.000 / kg s.d. Rp 350.000 / kg.

3. Good Capital Access (S3)

The cost of Bes-NO tobacco farming is high. So the ability of farmers in providing capital is very important. Based on the results of interviews with most farmers, until now the farmers have never difficulty in meeting the capital needs for farming. For those who can set aside profit from the previous tobacco farming system, no longer need to specify financial services / banking for the provision of capital. But for those who do not, the financial services / banking institutions can always be accessed easily by farmers who need it. This is as explained in the previous discussion due to the feasibility of tobacco farming is very high, so in the eyes of institutions financial services / banking tobacco farmers are considered to have a healthy liquidity.

4. Lack of Proper GTP Application (W1)

Tobacco farmers in carrying out tobacco farming activities Bes-NO using cultivation techniques obtained from their own experience, other farmers, and coaching provided by farmers groups and field extension workers. However, not all GTP is applied entirely by farmers. Tradition and habit of tobacco cultivation for generations from generation still coloring the technique of tobacco cultivation Bes-NO in this Tanjungrejo Village. For example, after planting, tobacco plants should be watered every day for the first 3 days then on the 4th day watered every 3 days. But in the implementation most of the farmers only watering 3 days to harvest. The reason besides, the way it requires a considerable cost either financially or labor, First watering for 3 consecutive days in experience does not always give significant results when compared to tobacco plants watered once on the third day after planting. In another example, the first Ieding in accordance with GTP should be 12-15 days after planting (HST) but most farmers (55%) do so at 31-35 HST on the grounds that it is customary.

1. Cultivation technology is still simple (W2)

Technology is very important for the sustainability of a farm. This is because farmers certainly have limited energy to take care of agricultural land in a relatively quick time. Technology that has been applied farmers to date is a tractor to lighten his work. But at the time of planting and harvest period, farmers still need a lot of manpower because the work is still done manually. At the time when planting seeds are made like a bed requires a lot of manpower.

2. Limited farming land (W3)

Based on the research result, it is found that the land status owned by most farmers is 21 people (52%) are rent, 16 person (40%) own property and the rest 3 people (7.5%) partly own property and partly rent. This condition is certainly a weakness for farmers. In the village of Tanjungrejo, it is very difficult to find agricultural land because every year there is always a land that switches to non-agricultural functions. In fact, the land area is one of the key factors for farmers to achieve business efficiency.

3. The selling price is determined by the middleman (W4)

The tobacco market is an oligopsonic market that can reduce the bargaining position of tobacco farmers because farmers do not have direct access to the factory. This then resulted in the process of tobacco sale brokered by middlemen / bandol / middleman / tauke and wholesalers. This condition leads to fluctuations in tobacco prices that are detrimental to farmers (Mark, et al, 2015). Farmers have a weak bargaining position in terms of determining the price of tobacco so that farmers are more often in the price taker position. Tobacco policy itself also contributes to the disadvantage of farmers. Until now, large factories / tobacco warehouse is not willing to buy directly tobacco to farmers. Every big factory is always representative of the middlemen. So, the farmer must sell the tobacco through the manufacturer's representative. This causes the middlemen to eventually become the tobacco price determinants and the tobacco price controllers.

B. Aspects of External Environment

Analysis of external strategy factors consists of Opportunities and Threats. Opportunities are described as favorable outside situ situations for Bes-NO tobacco farming in Tanjungrejo Village. Opportunity variables consist of 4 variables: land suitability, farmer group support, PPL monitoring and high market demand. Threats are described as unfavorable situations thus creating barriers originating outside the Bes-NO tobacco farming environment. The threat variable consists of 3 variables consisting of erratic weather, pest attack and fluctuating tobacco prices. In detail the results of external factor analysis can be seen in Table 5 below;

Table 5 Ikhtsar Analysis of External Strategic Factors (EFAS)

Factors of external strategy	Weight	Ranking	Value
Opportunity			
Land Suitability (01)	0,2	4	0,8
Farmer Group Support (02)	0,1	2	0,2
PPL Monitoring (03)	0,1	1	0,1
High Market Demand (04)	0,1	2	0,2
Threat			
Erratic Weather (T1)	0,2	4	0,8
Pest Attack (T2)	0,2	3	0,6
Fluctuating Tobacco Prices (T3)	0,1	2	0,2
Amount	1,00		2,90

Source: Processed Primary Data, 2016

1. Land suitability (01)

Land in Tanjungrejo village is suitable for Bes-NO tobacco farming, because the soil conditions are fertile and suitable to be planted with tobacco plants especially tobacco type Bes-NO. With the suitability of the land is an opportunity or potential owned by Tanjungrejo Village. According to Suwanto e.al (2014), tobacco plants are tropical plants that can live in a wide range of climates. Because of its neutral response to day length, tobacco plants can grow from 60° NL - 40° SL. The minimum temperature limit is 15°C and maximum temperature 42°C ideal temperature during the day is 27°C since the tobacco plant is planted until the leaf drying phase is expected to dry conditions. Rainfall is a determinant of tobacco yield and quality. Regulation of planting time based on dry period is very determining the success of tobacco farming.

2. Farmer Group Support (02)

Farmer group is a media of farmers to discuss in solving various problems. Most of the farmer groups in the village of Tanjungrejo are included in the active category in terms of program giving and coaching. Every once a month a group meeting is held with the agenda of discussing tobacco plants and other crops. The meeting aims to enable each member to share experiences, exchange information with each other, shared troubleshooting.

3. PPL Monitoring (03)

Guidance, counseling, and assistance and facilities are indispensable for tobacco farmers, especially small tobacco farmers who are vulnerable to so many internal disturbances. The guidance of PPL in Tanjungrejo Village can be said to be effective, the guidance done by PPL aims to make the farmers know the pest resistant tobacco seeds, as well as the pest resistant tobacco cultivation technique. Counseling conducted every tobacco growing season will begin in each farmer group.

4. High Demand (04)

The Bes-NO tobacco commodity is a very large plantation commodity. More and more years of cigarette consumption, as well as to Besuki Na Oogst tobacco export exports to some countries. With the high demand, this will benefit Besuki Na Oogst tobacco farmers in the village of Tanjungrejo. High demand for cigarette consumption is a good opportunity for Bes-NO tobacco farmers to keep on growing.

5. Erratic Weather (T1)

According to Dickinson in Tantawi (2007), the weather elements that affect the fungus include : 1) temperature, affecting the rate of growth and persistence of hypha and propagule, 2) rainfall and dew, directly affect the leaf wetness to allow germination and growth of pathogens, exudation and sedimentation con- stiblings on the surface of the plant and its dispersion., 3) moisture, affecting survival ability, pathogen growth and spore release, 4) wind, influential as carrier in spreading and settling of conidium on plant surface, And 5) light, affecting exudation, sporulation, conidium dispersal, conidium germination and growth.

The weather changes in Tanjungrejo Village have an impact on tobacco planting pattern. Tobacco Besuki Na Oogst is generally grown during the dry season and harvested at the beginning of the rainy season, Because only with rain water can eliminate the wax content that exists on Besuki Na Oogst tobacco leaves. Poor quality of tobacco, low production and loss of farmers one of them caused by weather factors. Weather changes that occur are factors that pose a threat to tobacco plants, especially tobacco Bes-NO. Therefore, weather changes greatly affect the quality of tobacco leaves Bes-NO.

6. Attack of Plant Disturbing Organisms (T2)

The attack of plant disturbing organisms (OPT) is a very disturbing threat in Bes-NO tobacco farming. Tobacco plants in Sumberejo village attacked by caterpillars, but the handling is done by farmers there that is not fully use of pesticides but the traditional way of looking for caterpillars one by one, It is done so that tobacco leaves still have good quality and does not contain many pesticides in the tobacco leaf. OMO attacks can decrease production, degrade quality, and increase control costs.

The results of research conducted by Tantawi (2007), weather elements such as air humidity and wind speed can affect the dispersion of conidium *C. nicotianae*. Air humidity is not always the main weather element in the development of disease. High humidity only affects the diseases of tobacco planted in moist moisture, whereas in dry and wet months it is not very influential. The high dispersion of conidium in dry months is supported by high wind speed and low air humidity. Conidium dispersal commonly occurs in the state of dry air, ie the humidity of air is lower than 70%.The amount of conidium captured decreases with increasing air humidity.

7. Fluctuating Tobacco Price (T3)

Prices of tobacco plants each season is very fluctuating in because there is no certainty of prices set by the government. Bes-NO tobacco price fluctuations occur due to the absence of a standard system in pricing of tobacco leaves. The pricing of tobacco leaves is determined

subjectively by the trader based on the color and aroma of the tobacco leaf. The fluctuation of tobacco prices is a factor that threatens the income of tobacco farmers.

External Internal Matrices

The internal and external matrix is a matrix consisting of nine strategies, To find out what strategy will be used then this matrix using internal power parameter of farm and external influence faced in Bes-NO tobacco farming. Based on Table 4, the IFAS score of 2.80 is obtained. Whereas, in table 5 for EFAS is 2.90. From the results of the IFAS and EFAS can be determined the position of farmers is based on the analysis of the total score of internal factors and external factors, By using the Wheelen Hunger Internal - External Matrix model Growth with concentration strategy through horizontal integration. Horizontal integration is a condition in which a company integrates the production of goods or services that still exist in one stage of production within the supply chain, Either through internal expansions, acquisitions, or mergers (Wikipedia, 2016). The horizontal integration strategy is strongly influenced by external factors. The Internal model - External Wheeler Hunger Matrix in detail in table 6 below;

Table 6. Wheelen Hunger's External-Wheeler External Model

EFAS IFAS	High (Score 3-4)	Middle (Score 2-3)	Low (Score 1-2)
High (Score 3-4)	<i>Growth</i> Concentration through vertical integration	<i>Growth</i> Concentration through horizontal integration	<i>Retrenchment</i> Turn Around Strategy
Middle (Score 2-3)	<i>Stability</i>	<i>Growth</i> Concentration through horizontal integration	<i>Retrenchment</i> Divestment Strategy
Low (Score 1-2)	<i>Growth</i> Concentric Diversification	<i>Growth</i> Conglomerate Diversification	<i>Liquidation</i>

Source: Rangkuti, 2006

Based on the analysis conducted through the SWOT matrix, Bes-NO tobacco farming should develop a strategic plan formulation of acquiring ownership and controlling competitors. The trick is with acquisitions, mergers, and takeovers. Adaptation of farmers to climate change. The focus of appropriate strategies in business development is by strengthening the farmer group institutions. According to Zakaria (2009) the strengthening of farmer groups can be done by way of;

- a) Endeavor with high awareness to improve the quality of knowledge and skills in the struggle for a better quality of life.
- b) Improving collective action efficiently in capturing economic benefits Due to the scale of business both in the process of production, marketing, access to production facilities.
- c) Establish partnerships with mutually reinforcing private parties that require, benefit, and reduce business costs and ensure business sustainability.
- d) Together with the private sector create a harmonious business atmosphere so that optimum business scale on both sides can be achieved.
- e) Improving the application of technology cultivation and processing in a sustainable manner so as to take advantage of added value to increase revenue.
- f) Diversify efforts to anticipate external shocks (overseas markets).
- g) Together with the private sector seeks to master market information in order to expand the market lap.
- h) There needs to be enforcement in the form of sanctions or incentives that give passion to farmers to be more active in farmer groups.
- i) Development of farmer resources through organizational management training, productive economic enterprises, courses and internships.

- j) The development of farmer groups can be pursued through the revitalization of the rules of the organization, the improvement of the structure and function of the organization and the enforcement of the rules of the game and the establishment of business partnerships.

CONCLUSION

1. Based on the analysis result, it is found that: 1) most of farmers still need assistance of banking service for capital provider that is 43%. 2) Farmers do not yet have the awareness to actively follow the counseling proved with about 22% of farmers who are actively attending counseling. 3) All farmers have known the phenomenon of climate change. Most farmers have made adaptations to their farms to cope with climate change.
2. Based on the results of SWOT analysis obtained IFAS score of 2.80 and EFAS is 2.9 So that can be determined the position of farmers by using the model Internal - External Wheeler Hunger matrix is in Growth zone with concentration strategy through horizontal integration.

Suggestion.

Based on the condition of the Tobacco Bes-NO farm in Tanjungrejo Village, the researcher gives the following suggestion:

1. Farmers should be more active in attending counseling provided by both government and private companies.
2. Farmer participation in strengthening farmer institution so farmer group can give benefit to farmer especially to market agricultural product and fulfill requirement of agriculture input.
3. It is expected that the government can become a facilitator in determining the standard price and agreed by both parties.

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