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STRATEGIES FOR AGRIBUSINESS DEVELOPMENT OF CHILI FARMING IN BOYOLALI REGENCY

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ABSTRACT

Chilli is one of high-value agricultural commodities, which is facing many challenges and problems. The objectives of the research are: (1) to identify the agribusiness institutions and their role on agribusiness development of chilli farming in Boyolali Regency; (2) to formulate alternative strategies of agribusiness development of Chile in Boyolali Regency; and (3) to identify the strategy priority to support agribusiness development of chilli in Boyolali Regency. Location of the research is determined by purposive sampling. It comprises the villages of Gedangan and Kembangkuning which are the center of chilli production in Cepogo Subdistrict, Boyolali Regency. 40 farmers are randomly chosen to be interviewed, while other stakeholders such as Boyolali Office of Agricutulture, Cepogo extension agency, chilli trader, and farmer group were also involved in the research. The analysis methods used are descriptive qualitative, IFE and EFE, IE, SWOT, and QSPM. The results of the research show that the following institutions play an important role in the agribusiness development of chilli in Boyolali Regency, namely agricultural inputs shops, farmers group, association of farmers group, chilli-based home industry, chilli processing company, traders of farm, and financial institutions such as BRI, Central Java Bank, BMT, UPK, traders of farm and farmers group, as well as government institutions such as Office of Agriculture of Boyolali Regency and extension agency of Cepogo Subdistrict. The study suggests that the alternative developing strategies are: (a) optimizing the role of extension agents to improve the quality of human resources, (b) sustaining the continuity of chilli production, and (c) optimizing post-harvest handling assistance. The result also suggests that increasing production and productivity as well as maintaining the quality of chilli are the prioritized strategies to develop agribusiness of chilli in Boyolali Regency.

***Keywords** : chilli, strategy, SWOT, QSPM.*

INTRODUCTION

Chili is one of the vegetable commodities that has a fairly high economic value, because of its role as an export commodity and the food industry (Tanindo Agribusiness Company, 2018). National chili productivity level for the last 5 years is around 6 tonnes / ha. If the supply of chilies is less or lower than demand, there will be an increase in price. Conversely, if the supply of chilies exceeds demand, the price will decrease (Pusat Data dan Sistem Informasi Pertanian, 2015). The seasonal chili price fluctuates almost every year. The hike in chili prices was caused by reduced supply, while demand was constant and continuous every day, even increasing in certain seasons (Farid and Subekti, 2012).

In general, the development of the harvested area for chilies in Indonesia in the period 1980-2014 fluctuated, but tended to increase with an average annual growth of 4.17% (Pusat Data dan Sistem Informasi Pertanian, 2015). Boyolali Regency is an area that is included in the center of chili development in Central Java. Chili development must be supported by good agribusiness aspects in order to produce quality products (Taufik, 2012). According to the Departemen Pertanian (2012), the agribusiness system is the largest contributor to the formation of gross domestic product (GDP).

The large potential of the agribusiness market needs to be supported by strong institutions so that competitive agribusiness can be realized (Uphoff (1992) *cited in* Suradisastra (2008)). According to Nurdin (2011), strengthening horticultural agribusiness institutions can be achieved through partnerships of farmers or farmer groups with private parties that are directly related to horticultural commodities.

In addition, it is also necessary to increase the capacity of human resources. Human resources, in this case the farmers, can be improved through extension (Saragih, 2001). Extension aims to help improve knowledge and skills to improve living standards through farming so that farmers can improve better farming, better business and better living (Dwijatmiko and Surtini, 2006).

This study aims to determine the institutions that play a role in chili agribusiness, determine alternative strategies for chili agribusiness development, and determine strategic priorities that should be applied to the development of chili agribusiness in Boyolali Regency. Agribusiness development strategy that is applied must of course

be in accordance with existing circumstances and can be applied properly in the area.

METHODS

The research was conducted in Gedangan Village and Kembangkuning Village, Cepogo District, Boyolali Regency. The research location was determined using the purposive sampling method, because it is a village that contributes a lot to chili production in Cepogo District. Respondents in this study include stakeholders and farmers. Stakeholders in this study consisted of 4 (four) people consisting of the Boyolali Regency Agriculture Office, BPP Cepogo District, farmers, and traders. Meanwhile, there were 40 farmer respondents who were determined using the proportional random sampling method from the population of members of the Margotani farmer group in Kembangkuning Village and the Karangsari farmer group in Gedangan Village. Data collection was carried out by interview method using a questionnaire which was conducted in February 2019.

The method used to determine the institutions that play a role in chili agribusiness is a qualitative descriptive analysis. The alternative strategy for chili agribusiness development was carried out by using IFE and EFE analysis, IE analysis and SWOT analysis. Meanwhile, to determine the priority of the strategy used QSPM analysis.

a. Qualitative Descriptive Analysis

Is a research method that is intended to obtain information about the state of symptoms at the time of the study (Arikunto, 1998).

b. IFE and EFE Matrix Analysis

According to David (2006), analysis using the IFE and EFE matrices is used to determine how much influence internal and external factors have in the development of chili agribusiness in Boyolali Regency.

c. IE Matrix Analysis

The IE matrix is an analysis to formulate an alternative strategy based on two key dimensions, namely the total IFE weighted on the x-axis and the total EFE value that is weighted on the y-axis (David, 2006).

d. SWOT analysis

Used to identify and prioritize goals and achievement strategies with the Strengths, Weaknesses, Opportunities, Threats of a business. Rangkuti (2014) explains that there are 4 (four) quadrants in the SWOT analysis. The quadrant in the diagram shows the position based on the assessment of its internal and external factors.

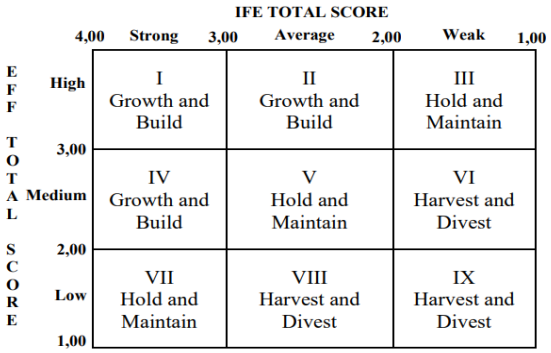

Figure 1.Internal-External (IE) Matrix (David, 2006)

e. QSPM analysis

Is an analytical technique to objectively determine the best alternative strategy from the various existing strategy options, by determining the relative attractiveness based on the extent to which internal and external factors are used. (David, 2006). QSPM in strategy formulation uses input from the first stage analysis and matching results from the second stage analysis to decide targets among alternative strategies based on the results of the SWOT analysis (Taslimi et al., 2014).

Table 1.QSP (Quantitative Strategy Planning) Matrix

Critical Success Factors	Weight	Alternative Strategies S1 US	S1 BAG	S2 US	S2 BAG	S3 US	S3 BAG
Opportunity							
1							
2							
Threat							
1							
2							
Power							
1							
2							
Weakness							
1							
2							
Total							

Source: David, 2011

RESULTS AND DISCUSSION

The institutions that play a role in chili agribusiness in Boyolali can be explained in Table 2. Identification of the role of each institution involved in agribusiness activities needs to be done in the agribusiness development of a commodity in an area (Syahyuti, 2004). The institutions analyzed in this study include the upstream subsystem (input providers), the farming subsystem, the downstream subsystem (processing), the marketing subsystem and the support subsystem. Each institution has a big role to play in supporting the development of agribusiness both now and in the future.

Strategic factors that influence the success of a chili agribusiness development strategy in Boyolali can be calculated using IFE and EFE analysis. Weighting is carried out on each of the internal and external strategic factors through interviews with stakeholders. The results of the IFE and EFE matrix calculations can be explained in Table 3 and Table 4 below.

The preparation of the Internal-External (IE) matrix is carried out based on a combination of the values obtained in the IFE and EFE matrices. The weighted total score on the IFE and EFE matrices will be the input to the IE matrix, so that it can be seen the position of chili agribusiness in Boyolali Regency based on existing internal and external factors.

Table 2. Institutions that play a role in Chili Agribusiness in Boyolali Regency

Agribusiness Subsystem	Institution	Role
Upstream subsystem	1. Farm shop	Providing agricultural production facilities in the form of seeds, fertilizers, pesticides, and agricultural tools.
	2. Farmers	Provide farm inputs in the form of fertilizers and pesticides.
Production subsystem	1. Farmers	Farmers.
	2. Farmer group association	Arranging the coordination of cultivation to be carried out by farmer groups.
Downstream subsystem	1. Domestic industry	Business actors in the processing sector
	2. Private companies	Performers of processing activities
Marketing subsystem	1. Traders	Intermediary between consumers in the market and traders between regions. Maintain the stabilization of chili prices in the market
	2. Regional Inflation Control Team (TPID)	
Support subsystem	1. Capital institutions (BRI, Bank Jateng, BMT, UPK, merchant collectors, farmer groups)	Provide capital credit for farming.
	2. Government (Agricultural Extension Center, Department of Agriculture, Plantation and Forestry of Boyolali Regency)	As a catalyst, facilitator and regulator of agribusiness development, as well as implementer of extension for farmers.

Source: Primary Data Analysis, 2019

Table 3. Final Results of the Analysis of Internal Strategic Factors (IFE) of Chili Agribusiness in the District Boyolali

Internal factors	Weight	Rating	Score
Power			
Experience chili cultivation	0.09	3	0.27
Liveliness farmers	0.08	3	0.23
Modernization of agricultural equipment	0.09	3	0.27
Institutional ones support	0.09	3	0.27
Product quality good	0.08	3	0.23
Total Strength	0.42	15	1.26
Weakness			
Land quality decreased	0.10	3	0.29
Land ownership narrow	0.07	3	0.20
Use fertilizers and pesticides excess	0.10	3	0.29
Knowledge Low human resources	0.09	3	0.27
Not yet post-harvest maximum	0.08	3	0.25
Chili continuity not guaranteed	0.05	2	0.11
Extension activities do not routine	0.09	2	0.18
Total Weakness	0.58	19	1.41
Total (Strength + _Weakness)	1.00		2.67
Difference (Total Strength – Total _Weakness)			-0.15

Source: Primary Data Analysis, 2019

Table 4. Final Results of EIFE External Strategic Factor Analysis) Chili Agribusiness in the District Boyolali

External Factors	Weight	Rating	Score
Opportunity			
Availability of infrastructure good	0.10	3	0.29
Availability capital assistance	0.11	3	0.31
Upward trend consumption of chilies	0.11	3	0.33
There is an offer partnership	0.10	2	0.19
Suitable climate for cultivation	0.11	3	0.33
Cooperation marketing	0.09	2	0.18
Ease of access production facilities	0.10	3	0.29
Total Opportunities	0.72	19	1.90
Threat			
The high price of fertilizers and pesticide	0.06	2	0.11
Extreme weather conditions	0.05	2	0.10
Price fluctuation chili	0.07	2	0.14
Competitor's area chili producer	0.03	2	0.06
Pest attack and disease	0.07	2	0.14
Total Threat	0.28	10	0.55
Total (Chance + Threat)	1.00		2.45
Difference (Total Chances – Total Threat)			1.35

Source: Primary Data Analysis, 2019

Based on the IFE matrix analysis in Table 3, it can be seen that the weighted score is for agribusiness internal strategic factors. chilies in Boyolali Regency were 2.67, while the weighted score of external strategic factors in the EFE matrix analysis in Table 4 was 2.45.

Each weighted total score of the two matrices is then mapped in the IE matrix, i.e. the IFE matrix weighted total score is mapped on the horizontal axis while the EFE matrix weighted total score is mapped on the vertical axis.

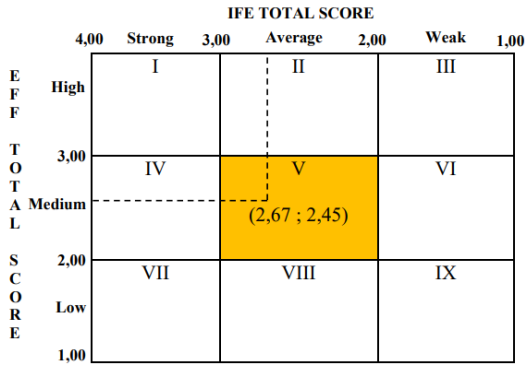

Figure 2. IE Matrix of Chili Agribusiness in Boyolali Regency

Determination of the position of chili agribusiness in Boyolali Regency is used to formulate an appropriate development strategy based on the results of the analysis of internal factors and external factors of farming. The score of the factors (strengths, weaknesses, opportunities, and threats) is used to determine the coordinates of the X axis and Y axis. The results of the calculation of the score of internal factors and external factors can be seen in Table 5.

Table 5. Results of the Calculation of the Score of Internal Factors and External Factors of Chili Agribusiness in districts Boyolali

Criteria	Score	Coordinate	Information
Internal factors			
Power	1.26	-0.15	X axis
Weakness	1.41		
External Factors			
Opportunity	1.90	1.35	Y axis
Threat	0.55		

Source: Primary Data Analysis, 2019

Based on Table 5, it is known that the X axis is at point -0.15 and the Y axis is at point 1.35. This coordinate point shows the position of the agribusiness which is located in quadrant III. The position of chili agribusiness in Boyolali Regency can be seen in Figure 3 below.

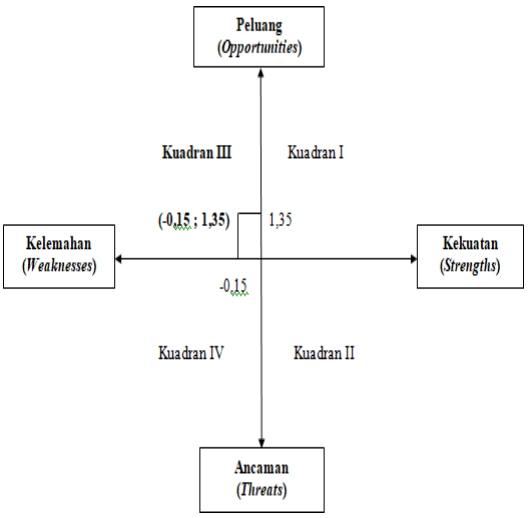

Figure 3. Chili Agribusiness SWOT Diagram in Boyolali Regency

Based on Figure 3, it can be seen that the position of chili agribusiness in Boyolali Regency is currently in quadrant III. This means that the chili agribusiness run by farmers faces a large market opportunity, but also faces several constraints / weaknesses internally. In quadrant III, companies are advised to change their strategy because it is feared that the previous strategy cannot be used to seize existing opportunities (Rangkuti, 2014). From the results of the SWOT matrix analysis, several strategies that can be applied to chili agribusiness in Boyolali Regency are obtained, including the following.

After determining strategic alternatives, the final stage in the development strategy planning is the selection of appropriate and applicable priority strategies. Determination of priority strategies is done by means of QSPM (Quantitative Strategy Planning Matrix) analysis. This analysis is carried out by providing an AS (Attractiveness Score) value, which is how the level of influence of a key factor on a particular alternative strategy. The alternative strategy with the highest TAS value is a strategy that needs to be implemented in advance by policy makers.

Based on the results of the matching phase of the Internal-External matrix and the SWOT matrix, an alternative strategy has been formulated in the development of chili agribusiness in Boyolali Regency. The strategic alternative is then calculated for its relative attractiveness value, so that the best strategic priority can be found to be implemented. The results of the QSPM on Table 6.

Table 5. Alternative SWOT Matrix for Chili Agribusiness Development Strategies in Boyolali Regency

IFE / EFE	Strength (Strenghts)	Weaknesses
	1. Experience chili cultivation 2. Activeness in farmer groups 3. Modernization of tools 4. Institutional which supports 5. Good product quality	1. The quality of the land has decreased 2. Narrow land ownership 3. Excess use of fertilizers and pesticides 4. Low HR knowledge 5. Post-harvest is not optimal 6. The continuity of chilies is not guaranteed 7. Extension activities are not routine
Opportunities (Opportunities) 1. Availability of infrastructure 2. Availability of capital 3. The increasing trend of chili consumption 4. Partnership offer 5. Suitable climate 6. Marketing cooperation 7. Convenience access to inputs	**A. SO Strategy** 1. Increase good cooperation between farmers and the government and capital institutions. (S2, S4, O2) 2. Increase production, productivity and maintain the quality of chilies. (S1, S3, S4, S5, O3, O5, O7) 3. Expanding marketing networks and partnerships. (S4, S5, O4, O6)	**B. WO strategy** 1. Optimizing the role of extension personnel to improve the quality of human resources. (W4, W7, O1, O2, O4, O6) 2. Maintain the continuity of chili products in order to meet market and company demands. (W6, O1, O3, O4, O7) 3. Optimizing the role of post-harvest handling assistance. (W5, O2, O3, O4)
Threats 1. The high price of fertilizers and pesticides 2. Extreme weather 3. Price fluctuation 4. Competitor's area 5. OPT attack	**C. ST Strategy** 1. Assistance in the manufacture of biological fertilizers and pesticides. (S2, S5, T1) 2. Keep up with competing regions by producing quality chilies. (S1, S3, S4, S5, T4)	**D. WT strategy** 1. Application of biological fertilizers and pesticides. (W1, W3, T1, T5) 2. Optimizing the role of extension workers in improving agribusiness management skills of farmers. (W7, T2, T3, T4, T5)

Source: Primary Data Analysis, 2019

Strategies that are prioritized in chili agribusiness development in the district Boyolali is to increase production, productivity and maintain the quality of chilies. This strategy is expected to meet consumer demand for quality chili products in continuous quantities. This availability is required at any time, even during the off season. In this case, a good cropping pattern management is needed so that the chili producing regions do not harvest simultaneously so that the supply and price of domestic chilies can be stable. Efforts to increase chili production are prioritized during the rainy season (off season). This is because during the rainy season, chili production tends to be lower. The low production is caused by pest and disease attacks that are greater than the dry season (on season).

Low chili production implies a decrease in the supply of chilies in the market which results in the potential for prices to rise. Therefore, efforts are needed to increase production so that the supply of chilies is still fulfilled during the off season.

Increased production can be pursued through the use of superior pest and disease resistant seeds / seedlings, as well as intensive application of GAP so as to increase the productivity and quality of the chilies produced. Efforts to increase productivity can be done by using organic and chemical fertilizers according to the extension's recommendations and optimizing the use of natural enemies in controlling pests and diseases.

The main problem during the on season is the high production of chilies so that the supply in the market is abundant. On the other hand, chili is a commodity that is prone to deterioration in quality so that the storage time is relatively short. Postharvest losses of chili can be in the form of physical losses and quality losses. Physical shrinkage, among others, is due to pests / diseases such as anthracnose exposure, and decay occurs. Physical shrinkage can also occur due to damaged chilies such as fractures due to improper post-harvest handling, for example poorly used packaging, or damage due to transportation. Meanwhile, the quality loss can occur due to the harvesting of chilies at a young age.

Maintaining the quality of the chilies can be done by maintaining the natural ripening of the chilies. In addition, the best harvest of chilies, especially red chilies, is when the red color is at least 50 percent. If the harvest is done less than that, the selling price will go down. Good handling of chili peppers in accordance with GHP (Good Handling Practices), including harvesting chilies is done at the optimum age and chilies that are harvested are not attacked by disease. Harvesting is done in the morning to reduce the temperature in the field. The chili storage container in the field must also use a container that does not cause damage, for example a plastic bucket / container with a non-rough surface. Furthermore, the chilies are put into packages such as plastic sacks / cardboard / crates according to their capacity and not compacted. existing chili handling technology in farmers so far (Balai Besar Penelitian dan Pengembangan Pascapanen Pertanian, 2017).

Table 6. Results of QSPM Analysis of Chili Agribusiness in Boyolali Regency

	Alternative Strategies	BAG	Priority
1.	Upgrade production, productivity and maintaining quality chili.	2.39	I
2.	Optimizing the role of extension personnel to improve quality of human resources.	1.54	II
3.	Maintain continuitychili products in order to fulfill market and company demand.	1.52	III
4.	Expand the networkmarketing and partnership	1.17	IV
5.	Optimizing the role of extension workers in improving their abilities farmer agribusiness management	0.82	IX
6.	Offset areacompetitors with produce quality chilies	1.09	V
7.	Optimizing role handling assistance post-harvest.	1.07	VI
8.	Applications biological fertilizers and pesticides.	1.06	VII
9.	Upgrade good cooperation between farmers and the government as well capital institutions.	1.03	VIII
10.	Accompaniment manufacture of biological fertilizers and pesticides.	0.72	X

Source: Primary Data Analysis, 2019

CONCLUSION

Institutions that play a role in chili agribusiness in Boyolali are in the form of upstream subsystems (agricultural kiosks and farmer groups), production subsystems (farmer groups and Gapoktan), downstream subsystems (home industries and private parties), marketing subsystems (traders and TPID), and subsystems. supporting institutions consisting of capital institutions (BRI, Bank Jateng, BMT, UPK, collecting traders, and farmer groups) and government agencies (Dinas Pertanian Boyolali Regency and BPP Cepogo District). Alternative strategies that can be applied to chili agribusiness in Boyolali Regency based on the current position are optimizing the role of extension workers to improve the quality of human resources, maintaining the continuity of chili products, and optimizing the role of post-harvest handling assistance.

REFERENCES

Arikunto, S. 1998. *Prosedur Penelitian Suatu Pendekatan Praktek*. Rineka Cipta, Jakarta.

Balai Besar Penelitian dan Pengembangan Pascapanen Pertanian. 2017. Kehilangan Pascapanen Cabai Harus Ditekan. <*http://pascapanen.litbang.pertanian.go. id/actual.html?type=news&id=191*>. Diakses 12 Maret 2019 : 21.52 WIB.

David, F.R. 2006. *Manajemen Strategis*. Edisi 10. Salemba Empat, Jakarta.

David, F.R. 2011. *Strategic Management Concept and Cases*. Person Education Inc, New Jersey.

Departemen Pertanian. 2012. *Kebijakan Teknis dan Program Ketahanan Pangan*. Departemen Pertanian, Jakarta.

Dwijatmiko, S dan S. Surtini. 2006. Pengaruh Frekwensi Penyuluhan Terhadap Penerapan Adopsi Sapta Usaha Sapi Perah. *Jurnal Sosial Ekonomi Peternakan* 2 (1) : 10-19. Fakultas Peternakan Universitas Diponegoro.

Farid, M. dan N.A. Subekti, 2012. *Tinjauan Terhadap Produksi, Konsumsi, Distribusi Dan Dinamika Harga Cabai Di Indonesia*. Kementrian Perdagangan RI, Jakarta Pusat.

Nurdin. 2011. Teknologi dan perkembangan agribisnis cabai di Kabupaten Boalemo, Provinsi Gorontalo. *Jurnal Penelitian dan Pengembangan Pertanian* 30 (2) :55-65.

Pusat Data dan Sistem Informasi Pertanian. 2015. *Outlook Komoditas Pertanian Subsektor Hortikultura*. Pusat Data dan Sistem Informasi Pertanian, Kementerian Pertanian, Jakarta.

Rangkuti, F. 2014. *Analisis SWOT Teknik Membedah Kasus Bisnis*. PT. Gramedia, Jakarta.

Saragih, B. 2001. Pembangunan sistem agrobisnis di indonesia dan peran *public relation*. *Jurnal Sosial Ekonomi Pertanian dan Agrobisnis* 1 (3) : 149-226. Fakultas Pertanian Universitas Udayana.

Suradisastra, K. 2008. Strategi Pemberdayaan Kelembagaan Petani. *Forum Penelitian Agro Ekonomi* 26 (2) : 82-91.

Syahyuti. 2004. Pemerintah, pasar, komunitas : faktor utama dalam pengembangan agribisnis pedesaan. *Forum Penelitian Agro Ekonomi* 22 (1) :54-62.

Tanindo Agribusiness Company. 2018. Menyimak Geliat Bisnis Cabai Indonesia.<*http:// www.tanindo.com*>. Diakses 29November 2018 : 12.01 WIB.

Taslimi, M. S., A.K. Omeyr. and S. Arabkoohsar. 2014. Formulating a strategy through quantity strategic planning matrix (QSPM) based on SWOT framework (Case study: industrial group of Barez Tires). *International Journal of Economy, Management, and Social Sciences* 3 (8) : 451-458.

Taufik, M. 2012. Strategi pengembangan agribisnis sayuran di Sulawesi Selatan. *Jurnal Litbang Pertanian* 31(2):43-50.