

JARDCS

Journal of advanced research in
dynamical and control systems



Indexing : Scopus and UGC Approved
ISSN : 1943-023X

Cite Score : 0.16

The Factors Driving and Inhibiting the Large Chili Agribusiness in Jember Regency

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Abstract--- This research is related to the factors driving and inhibiting large chili agribusiness in Jember Regency. The research sample uses purposive sampling, and it is known the sample is used by experts in the field of research as many as 12 people, carried out in Jember Regency for 4 (four) months of observation. The research method was conducted by focus group discussion (FGD) with data analysis tools using Force Field Analysis. The results showed that the large chilli farming in Jember Regency had a driving and inhibiting factor. The highest driving factor is a high-profit opportunity with an urgency factor value of 3.06, while the highest inhibiting factor is the weather and climate that is less supportive with an urgency factor value of 2.58. The strategy adopted is the focus strategy. Recommendations that should be applied are farming and sapta farming, while recommendations as an inhibiting factor are planting patterns and planting calendars. This is necessary so that at the time of harvest, the price of chili is high.

Keywords--- Drivers, Inhibitors, Agribusiness, Big Chilli.

I. Introduction

Chili (*Capsicum annum* L.) is a plant of members of the genus *Capsicum*. Chili in Indonesia is often referred to by various other names, such as chili, mengkreng, whiny, whiny, and many other names (Prajnanta, 2007). In general, chili has many nutritional and vitamin contents, including calories, protein, fat, carbohydrate, calcium, vitamin A, B1, and vitamin C (Arifin, 2010). Chili also contains lasparaginase and capsaicin, which act as anti-cancer substances.

Until now, it has been known as 12 types of chili. However, the most widely cultivated by farmers are only a few types, namely: cayenne pepper, large chili, paprika, and ornamental chili. Especially large chili is the type of chili that is most widely cultivated by Indonesian farmers (Tjahjadi, 1991). Large chili is characterized by a smooth or flat fruit surface, fleshy and thick in diameter, relatively unisistant to the storage, and less spicy, whereas cayenne pepper has the characteristics of small size, slippery fruit surface, and spicy taste. Chili is a plant that has high economic value. This is because the daily needs of this commodity for Indonesian people are very high because it is a raw material for vegetables used in households and industries.

The price of large chili is very volatile because the state of the large chili market is influenced by the number of large chillies available in the market. If a large chili is abundant, the price will be cheap. Furthermore, conversely, when there is little stock in the market, the price of large chili is very high (Prayitno et al. 2013). Successful chili cultivation does indeed promise attractive returns, but it is not uncommon for large chili growers to experience significant failures and losses. For success in large chilli farming, in addition to the required skills and sufficient capital, many factors need to be considered, such as growth requirements, seed selection, farming methods, control of plant pests (OPT), and post-harvest handling (Hartono, 2015).

Saptana et al. (2006) states that the main problem in the development of chili agribusiness is that the variety, quality, continuity of supply, and quantity have not been realized in accordance with market demand, especially for modern markets (supermarkets/hypermarkets), processing industries, institutional consumers (hotels, restaurants, hospital), and export markets. One of the problems is caused by the lack of coordination between agribusiness actors. This causes the institutional structure of the chili commodity agribusiness to become fragile, and the linkage of supply chain management to be weak so that the competitiveness of chilli commodities becomes weak. The weak competitiveness of chilli commodities is a challenge in the implementation of agricultural development in the future so that a strategy is needed to improve the competitiveness of chilli commodities in order to compete in the domestic and export markets.

According to Saptana et al. (2012), the gap between exports and imports from year to year indicates that the domestic market is increasingly filled with imported chili products, especially for the processing industry made from chili. This shows that domestic chillies have low competitiveness so that they cannot compete in both the export and domestic markets.

Associated with some of the understanding that has been raised, based on the understanding of some previous studies and problems that occur related to large chili in Jember Regency, the research was conducted to find out the factors driving and inhibiting the large chili agribusiness in Jember Regency.

II. Methodology

This research uses a qualitative approach. The qualitative approach allows in gathering information about an object in more depth to see the meaning behind the object and understand the phenomena that exist. In addition, the research method used is a case study so that researchers can explore the problem in detail by gathering several data from various sources of information.

The data used in this study are primary data and secondary data. Primary data obtained through primary sources, namely data sources that directly provide data to data collectors (Suliyanto, 2010). The primary data collection was carried out using methods: observation, interviews, distribution of questionnaires, and Focus Group Discussions (FGD) with large chilli farmers, farmer groups, the Office of Food Crops and Horticulture in Jember Regency, and related institutions. Secondary data is obtained through secondary sources, namely, sources that do not directly provide data to data collectors (Sugiyono 2010), but through Literature Studies, which are carried out by studying and analyzing information from the Standard Operating Procedure of Chili Cultivation, other documents from relevant agencies, the internet, books, research end reports, and journals relevant to this study.

The sample selection for the problem of developing a large chilli farming business in Jember was carried out by using a purposive sampling method. Purposive sampling is one of the non-random sampling techniques in which the researcher determines sampling by determining specific characteristics that are appropriate to the purpose of the study so that it is expected to answer the research problem (Nazir, 2013; Mardalis, 2004). The sample taken is an expert that is the expert or parties involved and understand the related problems. The experts referred to are the agricultural service numbering 2 people, Field Extension officers amounting to 2 people, the head of the farmer group numbering 1 and large chili farmers totaling 2 people, namely farmers who already have quite a long experience in conducting large chili farming or people who are experts in chilli farming and academics numbered 5 people. The total number of key informants was 12 people.

III. Data Analysis Method

The analytical tool used in this study is Force Field Analysis (FFA). The FFA was developed by Lewin and is widely used to inform decision making, especially in planning and implementing change management programs in organizations. According to Narayanasamy (2009), FFA is mainly used to find and analyze forces that can influence situations and cause changes in a positive direction. The main problem faced in the analysis of cause and effect (fishbone) is the goal in the FFA. Then we classify strength factors and opportunities and weaknesses and threats factors by assigning values based on actual conditions. These two factors will be the key to analyzing the extent to which we can influence and bring change to a better situation.

FFA is used in planning changes (Sianipar and Entang, 2003). With FFA, researchers obtain a complete and comprehensive picture of the various driving factors and inhibiting factors that exist in the main issue of activity, as well as estimating the sources of the drivers and sources of inhibitors. Determination of the driving and inhibiting factors from the Focus Group Discussion (FGD) with experts was then analyzed using the FFA method. This analysis is useful to determine the direction of change of activity, in this case, the strategy of developing large chili farming in Jember Regency.

FFA is best done by a small group of six to eight people, using flip charts or overhead transparencies so that all participants can see the ongoing discussion process (Start and Hovland, 2009). Respondents for the development of large chilli farming use experts from the Department of Agriculture, Field Extension Officers, heads of farmer groups, and large chili farmers, namely farmers who already have considerable experience in conducting large chili farming or people who are experts in chili farming and academics.

Factors that are driving and inhibiting it comes from internal and external. Drivers are a combination of strengths and opportunities, while inhibitors are a combination of weaknesses and threats (Sianipar and Entang, 2003). In

practice, this FFA is only divided into two factors, namely the driving factor and the inhibiting factor. Evaluation of each of the identified factors will determine the success factor of the goal. The determination of value is done by analyzing the driving and inhibiting factors for the development of large chilli farming in Jember Regency.

The stages in the FFA are:

1. Identify problems based on strategic issues.
2. Identification of driving factors and restraining forces.

The formulation of driving factors and inhibiting factors begins with interviews with key informants and surveys in the study area. After that, the initial driving factors and inhibiting factors are formulated, which are then used for brainstorming with research respondents.

Rated Aspect

To determine the success factors as strategic factors or key success factors, it is necessary to evaluate each of the identified factors. The aspects assessed from each factor are:

- a) Urgency or weight factors in achieving goals.
- b) Support or contribution of each factor in achieving the goal.
- c) The relationship between factors in achieving goals.

The assessment of these factors is carried out using a Likert scale (Likert scale) as follows:

- a) Very good, (5), means that the value of urgency/value of support/value of relevance is very high.
- b) Good, (4), it means high urgency value / support value / relevance value.
- c) Sufficient, (3), it means that the urgency/support value/relevance value is quite high.
- d) Lack of (2), meaning less urgency value / support value / relevance value.
- e) Very less (1), meaning very less value of urgency/value of support/value of relevance. Assess the relationship between factors that are not related, then given a value of 0.

IV. Evaluation of Driving and Inhibiting Factors

Assessment of the driving and inhibiting factors include:

a. Urgency Value (NU)

The NU assessment (urgency value) is carried out using a scale rating model 1-5 or through a comparison technique. Comparison technique is done by comparing one factor to another by using the question, "which is more urgent between the factors D1 and D2 in supporting the achievement of objectives". In evaluating the importance of this factor, a comparative format is designed, as presented in Table 1.

Table 1: Urgency Levels between Factors

Factor	Level of Comparison of Urgency Factors						Urgency Value (NU)
	D1/H1	D2/H2	D3/H3	D4/H4	D5/H5	D6/H6	
D1/H1							
D2/H2							
D3/H3							
D4/H4							
D5/H5							
D6/H6							
Total Urgency Value							

b. Factor Weight (BF)

BF assessment (factor weight) can be expressed in decimal numbers or percentages. The formula for determining BF is:

$$BF = (NF / \sum NF) \times 100\% \tag{1}$$

c. Value of Support (ND)

The value of ND (value of support) is determined by brainstorming through interviews with respondents i.e., farmers who do large chilli farming.

d. Value of Support Weight (NBD)

The NBD value (support weight value) can be determined using the formula:

$$\boxed{\text{NBD} = \text{ND} \times \text{BF}} \quad (2)$$

e. Value Relation (NK)

The value of the relationship is determined by the relationship between driving and inhibiting factors. The linkage value for each factor uses a range of values between 1-5. If there is no relation given a value of 0 while the factors that have a relationship are given a value between 1-5.

f. Total Value Linkage (KNP)

The total value of the connectedness is determined from the total number of the value of the relationship between the driving and inhibiting factors in a row.

g. Average Relation Value (NRK)

The formula can determine the average value of the relationship of each factor:

$$\boxed{\text{NRK} = \text{TNK} / (\sum \text{N} - 1)} \quad (3)$$

KNP = total value of relevance

$\sum \text{N}$ = number of internal and external factors assessed

1 = one factor that cannot be related to the same factor

h. Value Relation Weight (NBK)

The formula can determine the value of the weight of the relationship of each factor:

$$\boxed{\text{NBK} = \text{NRK} \times \text{BF}} \quad (4)$$

Total Weight Value (TNB)

The formula can determine the total weighting value for each factor:

V. Key Success Factors and Strength Field Diagrams

a. Determination of Key Success Factors (FKK) is carried out with the following steps:

- 1) Selected based on the biggest TNB
- 2) If the TNBs are the same, then the largest BF is chosen
- 3) If the BF is the same, then the largest NBD is chosen
- 4) If the NBD is the same, then select the largest NBK
- 5) If the NBK is the same, then it is chosen based on experience and rationality.

b. Strength Field Diagram

Based on the magnitude of the National Park, each driving and inhibiting factor can be described in a diagram called a force field diagram with the conditions to be achieved the development of large chilli farming in the Jember Regency.

VI. Formulation of Policy Recommendations

The formulation of policy recommendations for developing large chilli farming is seen from the highest value of the Key Success Factors (FKK). The development policy recommendations are adjusted to the reality of large chilli farming in the field, as illustrated in the force field diagram. Efforts to float large chilli farming are carried out by maximizing the dominant driving factors to project rational/logical goals to be achieved. Meanwhile, to prevent the risk of failure, policy recommendations can be made to minimize or eliminate key inhibiting factors.

VII. Results and Discussion

The prospect of developing large chili farming in Jember Regency was analyzed using Force Field Analysis, which is to find out the factors that support (Driving Force Factor) which consists of strength (strength) and opportunity (Opportunity) and factors that inhibit (Restraining) Force Factor which consists of weaknesses (Weaknesses) and constraints (Threaty), so it can be determined what actions can be taken to solve existing problems.

Driving Factors and Inhibiting Factors for Large Chili Farming

To find out the prospect of developing large chili farming in Jember Regency, Force Field Analysis (FFA) was used. FFA is an analytical tool used to identify various obstacles in achieving a goal in change and identify various possible causes and the solution to a problem. FFA in this study was used to plan the development of large chilli farming in Jember Regency based on the presence of driving and inhibiting factors.

Based on the results of the FFA analysis of large chili farming in Jember Regency (see Table 2, the driving factors and inhibiting factors in Large Chili Farming in Jember Regency), it can be seen the value of the Total Weight Weight (TNB) of each factor. Based on the TNB value, it can be determined the Key Success Factors (FKK) of large chilli farming in Jember Regency, namely by looking at the largest TNB value. FKK is divided into two, namely the pushing FKK and the inhibiting FKK. The driving factors in large chilli farming in Jember Regency are presented in Table 2.

Table 2: Drivers of Factors for Large Chili Farming in Jember Regency

Factor	Factors	BF	ND	NBD	NRK	NBK	TNB	FKK
D1	Expectations for high prices	0,13	4	0,53	3,91	0,52	1,05	4
D2	Higher profit opportunities	0,33	5	1,67	4,18	1,39	3,06	1*
D3	High market demand	0,27	3	0,80	2,64	0,70	1,50	2
D4	Support chili association in Jember	0,00	2	0,00	1,91	0,00	0,00	6
D5	Regional superiority for farming red chili	0,07	4	0,27	2,27	0,15	0,42	5
D6	Experience the red chili farming	0,20	4	0,80	2,64	0,53	1,33	3
	Total NU						7,36	

Description:

*) : Priority (FKK)

BF: Factor Weight

ND: Value of Support

NRK: Average Relation Value

NBD: Support Weight Weight

NBK: Linkage Weight Value

TNB: Total Weight Weight

FKK: Key Success Factors

Based on Table 2, it can be seen that the driving factor FKK, which has the highest value, is the D2 factor (high-profit opportunity) with a factor urgency value of 3.06. High-profit opportunities have the highest urgency value because high-profit opportunities are the most important motive that must be had in doing business, including in doing business. The opportunity to get high profits will encourage farmers to do large chili farming effectively and efficiently. Farmers will try to use inputs efficiently. Farmers will also try to cultivate large chillies correctly and adequately to increase productivity and production of large chili.

Like FKK, the highest value of support (ND) is high-profit opportunities. This indicates that high-profit opportunities are the most related factors in supporting the development of large chilli farming in Jember Regency. High-profit opportunities make farmers devote all of their resources to the success of their large chili farming. Farmers wholeheartedly devote all their time to maintaining and caring for their large chili.

In addition to the driving factors, there are also inhibiting factors that become obstacles (constraints) the development of large chilli farming in Jember Regency. The following table presents inhibiting factors for large chilli farming in Jember Regency.

Table 3: Inhibiting Factors in large chilli farming in Jember Regency

Factor	Obstacle factor	BF	ND	NBD	NRK	NBK	TNB	FKK
H1	The weather and climate are not very supportive	0,33	5	1,67	2,73	0,91	-2,58	1*
H2	Price fluctuations	0,20	4	0,80	2,82	0,56	-1,36	3
H3	Importing chillies from outside is damaging prices	0,27	3	0,80	2,55	0,68	-1,48	2
H4	High Production Costs	0,00	3	0,00	2,73	0,00	0,00	6
H5	The threat of chili pest	0,07	2	0,13	2,82	0,19	-0,32	5
H6	Red chili trade system is less organized	0,13	4	0,53	2,64	0,35	-0,88	4
	Total NU						-6,62	

Description:

*) : FKK priority

BF: Factor Weight

ND: Value of Support

NRK: Average Relation Value

NBD: Support Weight Weight

NBK: Linkage Weight Value

TNB: Total Weight Weight

FKK: Key Success Factors

Based on Table 3, it can also be seen that FKK is a barrier to large chilli farming in Jember Regency, namely H1 factor (unfavorable weather and climate) with a factor urgency value of 2.58. Good weather and climate (which supports large chili cultivation) are very important factors for large chili farming in Jember Regency. Horticultural farmers in Jember Regency have good knowledge about large chili cultivation techniques. Likewise, they have sufficient experience in farming large chillies. So that factors outside themselves (external factors), especially in the form of unfavorable weather and climate, become the determining and inhibiting factors in conducting large chili cultivation. □

The strength field of the driving factors and inhibiting factors for the development of large chilli farming in Jember Regency is presented in Figure 2.

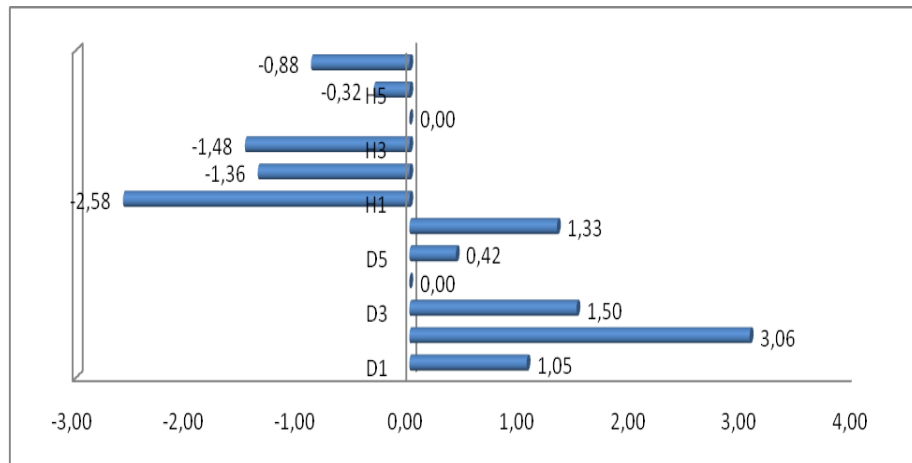


Figure 1

In line with Table 2 and Table 3, in Figure 1, it appears that the highest driving factor is D1, which is a high-profit opportunity, and the highest inhibiting factor is H1, i.e., the weather and climate are less supportive. Horticultural farmers in Jember Regency are commercial farmers, i.e., farmers who choose the type of plants to be cultivated are plants that have high-profit opportunities. This is in line with research Firdaus (2016), which states that bringing extensive chili farming has a high level of profit from all horticultural crops cultivated in paddy fields. So that the most extensive distribution, which includes 19 districts. The highest centers are in Wuluhan District and Ambulu District.

If seen from the total number of TNB driving factors and the total TNB inhibiting factor, the total number of TNB driving factors is 7.36, while the total number of TNB inhibiting factors is 6.62. This shows that the total number of TNB driving factors is higher than the total number of TNB inhibiting factors. This means that large chili farming has good prospects to be developed. The difference between the Bunaken National Park and the Bunaken National Park inhibiting factor is not large enough, so it is important to be aware that these two factors have almost the same potential as a factor that determines the success/failure of developing large chilli farming in Jember Regency.

Development Strategy for Large Chilli Farming in Jember Regency

After knowing the FFA analysis of large chilli farming in Jember Regency, it is necessary to formulate policy recommendations that are in accordance with the results of the FKK. This policy recommendation is an appropriate

way to achieve the stated goals. Through appropriate policy recommendations, the large chili farming in Jember Regency can be developed well.

Based on the results of the FFA analysis above, the most effective policy recommendations are to minimize the key obstacles and optimize the key drivers towards the objectives to be achieved. This approach is a focus strategy approach. Basing the results of the FFA analysis Figure 2, the strategy is focused on increasing profit opportunities through good and correct large chilli cultivation techniques. Through five farming and sapta farming, large chili cultivation can produce high productivity and production. Five farms are 5 farmer businesses in order to get maximum and quality results. Five farming businesses consist of:

1. Use of superior seeds
2. Good tillage
3. Proper fertilization
4. Control of pests/diseases
5. Irrigation/irrigation

Sapta farming is a continuation of the contents of the five farming businesses. If the five farming businesses explain about land management and up to maintenance, while sapta farming consists of seven farmer businesses in order to get maximum results and quality. Sapta farming consists of 5 things above plus the handling of crop processing and crop processing.

The Key Success Factors (FKK) are unfavorable weather and climate. To reduce unfavorable weather and climate impacts, three strategies are used: Anticipation, Mitigation, and Adaptation Strategies. Anticipation is the preparation of directions and strategies, programs, and policies in order to deal with global warming and climate change. Some important programs to be implemented include the formulation of strategies and planning for infrastructure development (especially irrigation networks), spatial evaluation for land management (adjusting plant species with carrying capacity), developing information systems and early warning of floods and drought, drafting and implementing laws and regulations regarding land use and land management methods. No less important is the increase in the ability of Human Resources (HR) in understanding climate change and the application of climate change adaptation and mitigation technologies.

Mitigation is an effort to slow the rate of global warming and climate change by reducing greenhouse gas (GHG) emissions and increasing GHG absorption. The program is more focused on the application of low-emission technologies, including superior varieties and low-emission plant species and/or high carbon absorption capacity, land preparation without burning, development and utilization of biofuels, use of organic fertilizers, biopesticides and animal feeds with low GHG emissions. As individuals and communities, we can also participate in this mitigation effort by practicing things like reducing the use of aerosols, saving water and energy, recycling items such as plastic, paper, and cardboard, glass and cans.

Adaptation is an effort to adjust technology, management, and policies in the agricultural sector with global warming and climate change. Adaptation programs are more focused on the application of adaptive technology, especially in food crops, such as adjusting cropping patterns, the use of superior adaptive varieties to drought, inundation/flooding, salinity, and early maturity, and agricultural diversification, land management technology, fertilizer, water, food diversification, etc. Institutionally this program is directed to the development of information systems such as climate field schools, extension systems, and workgroups (working groups) variability and climate change in the agricultural sub-sector, and the development of agricultural insurance systems due to climate risks (crop weather insurance).

Adaptation technologies that have been and will continue to be developed in the face of climate change in the agricultural sector are **Planting Calendar** (cropping patterns based on rainfall patterns and irrigation water availability), Adaptive New Varieties (salt-tolerant VUB, dry-resistant VUB, and early maturity and VUB waterlogging), water resources management technologies (identification of potential water availability technologies, rain harvesting, and surface runoff technologies, rainfall prediction technology, and irrigation technology) and land/land resource management technologies such as fertilization.

VIII. Conclusion

Large chilli farming in Jember Regency has driving factors and inhibiting factors. The highest driving factor is a high-profit opportunity with an urgency factor value of 3.06, while the highest inhibiting factor is the weather and climate that is less supportive with an urgency factor value of 2.58. The strategy adopted is the focus strategy.

Recommendations that should be applied to support the driving factor are farming and sapta farming. At the same time, recommendations as a solution to the inhibiting factor are to make cropping patterns and planting calendars. This is necessary so that at the time of harvest, the price of chili is high.

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