International Journal of Applied Environmental Sciences
ISSN 0973-6077 Volume 14, Number 4 (2019), pp. 339-350

http://www.ripublication.com

Many Guava Plants (*Syzygium malaccense L.*) Agribusiness Strategy in Jombang East Java

Suparno and Sumarji

Universitas Islam Kadiri East Java Indonesia

Abstract

Many guava plants (*Syzygium malaccense L.*) are cultivated in Gondangmanis Village, Bandar Kedung Mulyo District, Jombang Regency, East Java. The plant is very suitable with environmental conditions in Gondangmanis village so that people call Gondangmanis guava, has high yield potential, blackish purple fruit color, fresh sweetness, white flesh color such as cotton, fragrant fruit aroma and has been certified by the Minister of Agriculture of the Republic of Indonesia No: 308 / Kpts / SR.120 / 4/2006 under the name guava Gondangmanis. The research objective was to establish the agribusiness strategy of Gondangmanis guava. The research location was in Gondangmanis village, Bandar Kedung Mulyo District, Jombang Regency, East Java. Research time starting April to June 2019. SWOT and QSPM analysis methods. The conclusion of the analysis was chosen SO Strategy. The highest attraction value is found in strategy 1 (SO) with a sum attractiveness (TAS) of 6.85, which is taking action between the local government, the main actors, community leaders, village-owned enterprises, to produce superior quality and quantity of fruit and protect and preserve Gondangmanis guava as a characteristic that is owned by Gondangmanis Village, Bandar Kedung District, Mulyo Jombang, East Java.

Keywords: Gondangmanis Guava, Agribusiness, SWOT Analysis, QSPM Analysis.

I. INTRODUCTION

Many guava (head guava and red guava) is a fruit plant of guavas relatives which is an annual fruit plant originating from the Indo-China region, Malaysia, the Philippines, Indonesia. Other literature concluded that bol guava originated from Malaysia. This guava fruit has a meat texture that is softer and denser than water guava. It is not very clear why the name is because bol (*Malay*) or bool (*Sundanese*)

means "butt". In English it is known as Malay apple, while the scientific name is *Syzygium malaccense* (which means: "*originating from Malacca*") refers to one of its origins.

Jombang Regency, East Java, is currently working to improve the tourism sector and the community economy by developing the agricultural sector in Horticulture, one of the horticulture plants developed, namely Guava Bol Gondangmanis in Gondangmanis Village, Bandar Kedung Mulyo Subdistrict, has been certified by a Ministerial Decree Agriculture of the Republic of Indonesia Number: 308 / KPTS / SR.120 / 4/2006, characteristics identified in Gondangmanis guava: have purplish red flower crowns, yellow stamen colors, sum of flower flowers 3-12, number of bunches 1 -5, bell fruit shape without curves, ripe purple rind skin color, pure white flesh color, fresh sweet fruit taste slightly sour and not stale, fragrant fruit aroma, smooth and chewy flesh texture, fruit moisture content 89.54 -89.90%, vitamin C levels 31.5-35.9 mg, fruit sugar content 7.5 - 80 brix, number of seeds 1 fruit, long flower blooms until harvest 3.5 months, fruit storage at room temperature 3 days after harvest. guava bol Gondangmanis grows well in the lowlands, 50-100 meters above sea level, with a rather wet humidity regime and shallow groundwater (Maksum et al., 2006)

Gondangmanis Village, Bandar Kedungmulyo District, Jombang Regency, East Java has a yard area of 39.5 hectares, while the area used in farming is 410.7 hectares. The guava in Indonesia has three varieties, namely Jamaican Guava Bol, guava Bol Dersono, Guava Gondangmanis. One of the superior varieties of guava Gondangmanis has been known by the people of Jombang and its surroundings, but its development to date has not developed rapidly in the production centers in Gondangmanis village, Bandar Kedungmulyo sub-district.

The potential of Gondangmanis guava at the age of 4 years results in 100-200 kg / tree / year at the age of 10 years producing 200 - 300 kg / tree / year with twice the harvest season. If the average guava crop produces 200 kg / tree and the price of guava fruit is around Rp 10,000, - one kg at the farm level, then one plant can produce around Rp 2,000,000, - from harvest to August to December.

II. RESEARCH METHODS

The study was conducted in Gondangmanis Village, Bandar Kedungmulyo District, Jombang Regency. Purposive location determination is based on the consideration that the village is known as the Gondangmanis guava producer center.

Sampling method is Purposive sampling where samples are maintained based on certain considerations based on the purpose of the study. Determination of farmer samples (*Respondents*) carried out in simple random sampling (*sample random sampling*)

Research uses two types of data sources. First, primary data is obtained directly through questionnaires, interviews and observations in groups of farmers, community leaders, and government officials. Both secondary data collects documents from the sub-district office, the agricultural service and library books.

Data is processed with the SWOT matrix. The results of the alternative strategy analysis obtained will be analyzed more deeply by using the QSPM matrix to determine the chosen strategy based on the level of importance in a value of attraction on internal and external factors (David and Taufik, 2012)

SWOT Matrix

The SWOT Matrix (Strengths - Weakness - Opportunities - Threats) is an important analysis tool that can help managers develop four types of strategies, namely SO strategies (Strengths - Opportunities), WO Strategies (Weaknesses - Opportunities), ST Strategies (Strengths - Threats), WT Strategy (Weaknesses - Threats). Matching the main external and internal factors is the hardest part in developing a SWOT matrix and requires good judgment and no correct guidance. There are eight steps in forming a SWOT matrix, as follows.

a. Create the Company's main internal strengths

b. Create the company's main internal weaknesses

c. Make a list of the company's main external opportunities

d. Make a list of threats - the company's main external threats

e. Match strengths with opportunities, and record the results in the cell strategy SO

f. Match weaknesses with opportunities, and record the results in the WO strategy cell

g. Match strengths with threats, and record the results in the ST cell strategy

h. Match weaknesses with threats, and record the results in the WT Strategy cell

Table : SWOT Matrix (Rangkuti, 2006)

IFAS / EFAS	STRENGHT (S) Determine 5-10 internal strength factors	WEAKNESS (W) Determine 5-10 internal weakness factors
OPPORTUNITIES (O) Determine 5-10 Factors - external opportunity factors	STRATEGI S -O Creating strategies that use strength to take advantage of opportunities	STRATEGI W -O Create strategies that minimize weaknesses to take advantage of opportunities
THREATS (T) Determine 5-10 external threat factors	STRATEGI S- T Creating strategies that use strength to overcome threats	STRATEGI W - T Create strategies that minimize weaknesses and avoid threats

Quantitave Strategic Planing Matrix (QSPM)

Umar and Firdaus (2017) say there is a technical analysis of a design to determine Relative Attractiveness of alternative strategic actions that can be implemented. This technique is a Quantitave Strategic Planing Matrix (QSPM), a technique used by decisions from a strategy formulation analysis framework. This technique clearly shows which alternative strategies are the best to choose. QSPM uses input from analysis results (EFE and IFE) and on processing (IE Matrix and SWOT Matrix). The stage that must be done in making QSPM

1. Make a list of strengths - weaknesses company (Internal Factors) and threats - opportunities company (External Factors) taken directly from the EFE and IFE matrix
2. Give weights for each of the internal factors and external factors. This weight must be identical to the weight given to the IFE and EFE matrices
3. Explain the alternative strategies generated in the SWOT matrix
4. If the relevant factor has an influence on the alternative strategy being considered, give the Atractiveness Score that ranges from 1 to 4, value 1 = not interesting, value 2 = rather interesting, value 3 = logically interesting and value 4 = very interesting
5. Calculate the Sum Atractiveness Score (TAS) by multiplying the weight
6. With Attractiveness Score (AS). Sum Attractiveness score shows Relative Atractiveness of each alternative strategy
7. Calculate the sum TAS value in each QSPM colum. The greatest value indicates that the alternative is the first choice and the smallest TAS value indicates that the alternative strategy is last chosen. QSPM uses input from analysis results (EFE and IFE) and on processing (IE Matrix and SWOT Matrix) for further analysis through QSPM. The basic form of QSPM can be illustrated as in the table.

Table : QSPM (illustration)

Strategic Factors	**value**	**Strategic 1**		**Strategic 2**		**Strategic 3**		**Strategic 4**	
		AS	TAS	AS	TAS	AS	TAS	AS	TAS
Strengths									
Weakness									
Opportunities									
Threats									
Sum									
Value of attraction									

Authority: Umar (2001)

Information:

AS : Actraktive Score

TAS : Sum Actraktive Score

Internal Scale : 1= very weak, 2= weak, 3= strong, 4= very strong

External Scale: 1= The company's response is weak, 2= average company response, 3= the company's response is above average, 4= The company's response is very strong

III. RESULTS AND DISCUSSION

Identification of Internal Factors

Strenghts

1. Gondangmanis Village has an Agroecology that is in accordance with plant growth requirements, namely: place height 50-200 meters above sea level, temperature 18-22 º c, fertile soil, rich in organic and sandy material.
2. The main actors have skills and expertise in managing Gondangmanis cash crops.
3. Gondangmanis guava seedlings are quite available because the main actors and seed growers can be produced with guidance from field agricultural instructors
4. Supporting institutions, namely farmer groups, cooperatives and village-owned enterprises.
5. The Decree of the Minister of Agriculture of the Republic of Indonesia Number: 308 / KPTS / SR.120 / 4/2006 concerning the release of location-specific local varieties of Guava Gondangmanis.
6. Availability of land for planting Gondangmanis guava.

Weaknesses

1. Lack of knowledge the main actors about guava management are Gondangmanis in terms of planning, regulation, implementation and supervision.
2. The average land ownership of farmers is less than 0.5 ha, thus hampering development efforts.
3. The capital owned by the main Actor is limited / lacking in development.
4. Plants that produce Gondangmanis Guava in the market are more commonly referred to as Dersono Guava, even though it is different from Dersono Guava.

5. Lack of maintenance activities by the main actors, so this guava does not have good quality.
6. Limited ability of the main actors in accessing the market and so far the seller has been to middlemen.

Identification of External Factors

Opportunities

1. Gondangmanis guava is an annual plant that usually bears fruit in April, July, August, September, and in those months there are not many other fruiting plants that bear fruit
2. In terms of the Marketing Strategy the main actors can read market opportunities
3. The adoption of technology carried out by the main actors is grafting technology, attaching and connecting
4. Government policy has rolled out business criteria or capital for the main actors.
5. There is already processing of Gondangmanis guava fruit in the form of syrup, dodol, fruit juice which has already obtained a home industry trade permit (PIRT).
6. Production Facilities have been assisted by the Regional Government

Threats

1. Natural disasters are floods from the overflow of the Brantas river in the rainy season
2. Imported fruits at lower prices
3. Reduction of land for cultivation. Because of the transfer function for buying and other.
4. Climate anomalies / seasonal changes can interfere with fertilizing Gondangmanis guava
5. Pests and diseases can reduce the productivity of guava fruit, especially stem borer so that the stem is dry and dead
6. The number of guava varieties besides Gondangmanis, namely Jamaica and Dersono varieties which are cheaper, can cause consumers to switch to the varieties.

IFAS end EFAS Matrix in SWOT Analysis

IFAS / EFAS	STRENGHTS (S) 1. Agroecology 2. Quality of HR 3. Availability of seeds 4. Availability of land 5. Farmer Institution 6. Government Policy	WEAKNESSES (W) 1. Weak Farming Management 2. Sempit land ownership 3. Limited capital 4. Similar names to other guava 5. Poor maintenance 6. Limited market access
OPPORTUNITIES (O) 1. Availability of fruit outside of other fruit seasons 2. Marketing Strategy 3. Technology adoption is good 4. Production Facilities available 5. Monetary Policy 6. Product Processing Industry	STRENGHTS (SO) 1. Agroecology that is suitable for cultivating guava Gondangmanis combined with high will be able to create superior Gondangmanis guava, available outside of other fruit seasons and marketing strategies so as to create market trends 2. Availability of seeds, land and technology adoption will produce good quality and quantity of Gondangmanis guava 3. The production of Gondangmanis guava will be superior if supported by the availability of production facilities and government and monetary policies that favor the farmers	WEAKNESSES (WO) 1. Farming management needs to be improved to produce superior Gondangmaqnis guava and the fruit will always be outside the fruit of other seasons 2. Narrow land ownership needs to be supported by technology adoption so that production is high 3. Poor maintenance will not become a problem if government policies support, the existence of processing industries and reduce the use of other regional names
THREATS (T) 1. Natural Disasters 2. Imported fruit 3. Land Function Transfer 4. Changes in season 5. Disease Pests 6. Other varieties	STRENGHTS (ST) 1. The suitability of agroecology and quality of human resources must be able to minimize natural disasters 2. Availability of seeds, and land capable of producing superior Gondangmanis guava to rival imported fruits and maintain Gondangmanis varieties 3. Government policy in empowering institutional farmers must be able to anticipate the effects of seasonal changes and disease pests and government policies	WEAKNESSES (WT) 1. The integration of farm management and the availability of capital will be able to anticipate natural disasters and be able to produce good quality guava Gondangmanis to deal with imported fruit 2. Constraints in the function of land change in the seasons, disease pests are not an obstacle to producing superior Gondangmanis guava 3. Economic crisis constraints can be anticipated during the quality of the superior Gondangmanis guava and are favored by consumers and densely penetrate the export market and agricultural products processing industry

Choice of Alternative Strategies with Matrices QSPM

There are six steps needed to develop QSPM :

1. Register internal strengths / weaknesses and external opportunities / threats in the left column of QSPM. This information must be taken directly from the IFAS and EFAS matrices.
2. Provide weights for each internal and external factor. This weight is the same as in the IFAS and EFAS matrices. Weight is presented in the column right next to the external and internal key success factors.
3. Check the strategy formulation stage and identify alternative strategies that must be considered by the company to be implemented.
4. Establish the value of attraction (Attractiveness Score / AS). Determine the numerical value that shows the relative attractiveness of each strategy in the alternative strategies. The value of attractiveness is determined by examining each of the internal and external critical success factors, one by one. If the susceptibility factor influences the chosen strategy, the strategy must be compared relative to the key factors. The value of attraction must be given to each strategy to show the relative attractiveness of one strategy over the other. The value of the attraction is 1 = not attractive, 2 = rather interesting, 3 = quite interesting, and 4 = very interesting.
5. Calculating the sum attractiveness score (TAS). The sum value of attraction is determined as a result of multiplying the weights with the value of attraction. The higher the TAS, the more interesting the alternative strategy.
6. Sum Attractiveness Score / TAS shows Relative Attractiveness of each alternative strategy.

Table : QSPM Matrix of Gondangmanis Guava Agribusiness Development Strategy

Nu	Factors	Value	Alternative Strategy							
			1		2		3		4	
			AS	TAS	AS	TAS	AS	TAS	AS	TAS
	Strengths									
1	Agroecology that supports	0,1	4	0,4	2	0,2	3	0,3	1	0,1
2	Quality of HR	0,1	4	0,4	3	0,3	2	0,2	1	0,1
3	Availability of seeds	0,1	4	0,4	3	0,3	2	0,2	1	0,1
4	Land availability	0,1	3	0,3	4	0,4	2	0,2	1	0,1
5	Farmer Institution	0,05	4	0,2	3	0,15	2	0,1	1	0,05
6	Regional Government Policy	0,05	4	0,2	3	0,15	1	0,05	2	0,1
	Sub Sum			**1,9**		**1,5**		**1,05**		**0,55**
	Weakness									
1	Farm Business Management	0,1	3	0,3	4	0,4	1	0,1	2	0,2
2.	Land ownership	0,1	4	0,4	2	0,2	3	0,3	1	0,1
3.	Capital	0,1	3	0,3	4	0,4	1	0,1	2	0,2
4.	Use of other regional names	0,1	2	0,2	4	0,4	1	0,1	3	0,3
5.	Poor maintenance	0,05	4	0,2	3	0,15	1	0,05	2	0,1
6.	Limited Market Access	0,05	3	0,15	4	0,2	1	0,05	2	0,1
	Sub Sum			**1,55**		**1,75**		**0,7**		**1**
	Opportunities									
1.	Out-of-season fruit availability	0,1	3	0,3	4	0,4	2	0,2	1	0,1
2	Marketing strategy	0,1	3	0,3	4	0,4	2	0,2	1	0,1
3	Technology Adoption	0,1	4	0,4	3	0,3	1	0,1	2	0,2
4	Monetary policy	0,1	3	0,3	4	0,4	1	0,1	2	0,2
5	Production Facilities	0,05	4	0,2	3	0,15	2	0,1	1	0,05
6	Product Processing Industry	0,05	3	0,15	4	0,2	1	0,05	2	0,1
	Sub Sum			**1,65**		**1,85**		**0,75**		**0,65**
	Threats									
1	Natural disasters	0,1	4	0,4	2	0,2	3	0,3	1	0,1
2	Imported fruit	0,1	3	0,3	4	0,4	1	0,1	2	0,2
3	Land use change	0,1	3	0,3	4	0,4	2	0,2	1	0,1
4	Seasonal Changes	0,1	4	0,4	3	0,3	2	0,2	1	0,1
5	Disease Pests	0,05	3	0,15	4	0,2	1	0,05	2	0,1
6	There are other varieties	0,05	4	0,2	3	0,15	2	0,1	1	0,05
	Sub Sum			**1,75**		**1,65**		**0,95**		**0,65**
	SUM			**6,85**		**6,75**		**3,55**		**2,85**

Source: Data processed (2019)

Information:

AS : Actraktive Score

TAS : Sum Actraktive Score

Internal Scale : 1= very weak, 2= weak, 3= strong, 4= very strong

External Scale: 1= The company's response is weak, 2= average company response, 3= the company's response is above average, 4= The company's response is very strong

Based on the results of the QSPM matrix, the highest attraction value is found in strategy 1 (SO) with a sum attractiveness (TAS) of 6.85. The second highest attraction value is found in strategy 2 (WO) with a sum TAS of 6.75, the third highest is in strategy 3 with a sum TAS of 3.55. While the lowest attraction value is found in strategy 4 with a sum TAS of 2.85. Strategies that can be prioritized in the application of Gondangmanis guava agribusiness development strategies in Jombang district, can be formulated in the following sequence of strategies:

Strategy SO a.) The strategy of developing Gondangmanis guava combined with quality human resources and supporting agroecology in Gondangmanis village will create superior production and can bear fruit outside the season b.) Development strategy of Gondangmanis guava followed by adoption of cultivation technology, availability of seeds and land will produce Gondangmanis guava fruit which is of high quality and quantity c.) Government support, especially in providing infrastructure. (The sum amount of attraction is 6.85).

WO Strategy a). Increasing farm management will increase the production of the optimal Gondangmanis guava fruit and can bear fruit off-season b.) Adoption of the right cultivation technology will get optimal results c.) The processing industry and support from the Government will improve the quality of Gondangmanis guava. (The sum amount of attraction is 6.75).

Strategy ST a). Development of quality human resources and appropriate agroecological support will be able to minimize the occurrence of natural disasters. B) Providing sufficient land and seeds to anticipate imported fruits that can shift Gondangmanis guava (amount of attraction value 3.55).

Strategy (WT) a). Coaching about farming management, b). availability of capital, 3). efforts to anticipate imported fruits by always providing quality assurance and the existence of these fruits are still favored by the community (The lowest sum attraction value is 2.85).

IV. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

1. Agroecology that supports and integrates with human resources the main actors who are able to implement the adoption of graft and grafting technology and tissue

culture will accelerate the development of Gondangmanis guava in Jombang Regency.

2. Gondangmanis guava is a distinctive and location-specific superior variety that maintains quality and quantity will produce Gondangmanis guava which can compete with imported fruit.
3. Government policies in the provision of infrastructure and facilities to improve development and production will make the Gondangmanis sugar superior and attractive to the market.

Recommendation

Further research is needed in more depth and detail, at different times, situations and conditions.

Acknowledgements. We are grateful to the Kadiri Islamic University for funding support.

REFERENCES

Anonymous 2012. *Petunjuk Penulisan Usulan Penelitian Dan Tesis*. Program studi Magister Manajemen Agribisnis. Pascasarjana Universitas Islam Kadiri. Kediri

Anonymous, 2017. *Data Primer Desa Gondangmanis* . Bandar Kedung Mulyo. Jombang

Beattie, B. R. And C. R. Taylor.1996. *Ekonomi Produksi*. Penerbit Gajah Mada University Press, Yogyakarta

BPS Kabupaten Jombang. 2018. *Kabupaten Jombang Dalam Angka* Badan Statistik Kabupaten Jombang. Jombang

David J. Hunger dan Thomas L Whalen . 2003. *Managemen Strategi*. Andi, Yogyakarta.

Diperta Kab. Jombang. 2018. *LaporanTahunan 2018. Dinas Pertanian Tanamana Pangan* Pemerintah Kabupaten Jombang

Dirjen PPHP Deptan. 2007. *Penanganan Pasca Panen Buah.* Direktorat Jendral Pengelolaan dan Pemasaran Hasil Pertanian Departemen Pertanian. Jakarta

ER.B. Pantastico.1989. *Fisiologi Pasca Panen Penanganan dan Pemamanfaatan buah – buahan dan sayuran Tropika dan Subtropika*.Gajah mada Universty Press. Yogyakarta

Kemas Hanafiah. 2007. *Dasar – Dasar Ilmu Tanah*.Penerbit PT Raja Grafindo Persada. Jakarta

Muhammad Ridwan. 2013. *Analisis Usaha Tani guava Kristal Desa Cikarawang, Kecamatan Darmaga* . Bogor. Skripsi Institut Pertanian Bogor

Nugraheni Widyawati .2014. *Urban Farming Gaya Bertani Specifik Kota*. Penerbit Andi. Yogyakarta.

Nuhung, I.A., 2007. *Menbangun Pertanian Masa Depan.* CV. Aneka Ilmu, Semarang.

Prabu Ali, 2012. *Kewirausahaan Berbasis Agribisnis*, CV Andi Offset. Yogyakarta

Rangkuti Freddy, 2013. *SWOT Balanced Scorecard (teknik Menyusun Strategi Korporat yang EfektifPlus Cara Mengelola Kinerja dan Resiko),*PT Gramedia Pustaka Utama, Jakarta.

Rangkuti Fredy, 2008. *Analisi SWOT, Teknik Membedah Kasus Bisnis,* PT Gramedia Pustaka Utama, Jakarta.

Said. E.G. dan Intan. AH, 2001. *Managemen Agribisnis*. Ghalia Indonesia.

Soekarwi. 2003. *Agribisnis; Teoridan Aplikasi*. Raja Grafindo Persada. Jakarta

Sugiarto, siagian, Sunaryanto, oetomo Denny, 2001. *Teknik Sampling,* PT Gramedia Pustaka Utama, Jakarta

Sugiyono, 2008. *Metode Penelitian Kuantitatif, Kualitatif dan R&D,* Cetakan ke-4 Alfabeta. Bandung

Suryabrata Sumadi. 1981. *Peoman Penelitian.* CV. Rajawali, jakarta

Syaifullah.1986. *Petunjuk Memilih buah Segar*. Penerbit Penebar Swadaya. Jakarta

Trubus vol.09. 2012. *Hama dan Penyakit Tanaman Deteksi dini dan Penanggulangannya.* Penerbit Majalah Trubus . Jakarta

AUTHOR BIOGRAPHY

Dr. SUPARNO, SP, MMA. Dosen Universitas Islam Kadiri, Kediri, Indonesia

Prof. Dr. SUMARJI, SP, MP. Dosen Universitas Islam Kadiri, Kediri, Indonesia