Profile Review of Grapes Horticulture Cultivation in the Buleleng

Sri Mulyani[1], Bambang Admadi [2], Ketut Satriawan [3] and Made Hendra Mardiana [4]

Department of Agroindustrial Technology , Faculty of Agricultural Technology,
Udayana University, Jl. Kampus Bukit Jimbaran. Bali
Email: moel_pstp@yahoo.com[1]
ba_harsojuwono@yahoo.com[2]
tutsatria@yahoo.com[3]

Abstract

Buleleng as a centre of grape commodity in Bali has experienced a decrease in the number of grapes production. Grapes horticultural profile should be made based on 6 (six) pillars of the horticulture development. The aim of this study is to determine cultivation profile of the grapes horticulture in Buleleng. This research uses purposive sampling method to determine sample location. The respondents consist *of farmers, stakeholders and other relevant agencies which chosen by using random sampling method. The results show respondents' opinion related to the pillar program compatibility and incompatibility: 1) development of horticultural area 78.88% and 20.00%, 2) application of GAP / SOP 68.88% and 29.63%, 3) implementation of supply chain management (SCM) 59.10% and 40.90%, 4) implementation of integrated horticultural facility 64.18% 33.32%, 5) Institutional development 19.99% and 79.18%, and 6a) increase on horticultural consumption 44.06% and 51.48%, while 6b) on the export acceleration 7.91% and 92.09%. Based on the six pillars development program implementation, only four programs namely program 1, 2, 3, and 4 that have high average of compatibility (67.76%) while the other two programs, namely the program 5 and 6 have lower average of compatibility (22.99%).*

Key word: *6 pillars of the horticulture development. grape, Buleleng*

1. INTRODUCTION

Indonesia produces a wide range of tropical fruits with various and excellent taste (Anonim. 2006). Nevertheless the development of grapes commodity in Indonesia is limited. The centers of grapes cultivation in Indonesia are only in Buleleng, Palu and Probolinggo (Setiadi, 1986). Anonymous (2010) stated that Buleleng is the center grapes cultivation in Bali where grapes have been planted since 1984. The varieties of grapes planted in Buleleng are: Gross Colman, Frankenthaler, Isabella, Alphonso Lavalle, and Brilliant. Based on data in 2009, grapes planting area in Buleleng is around 1118.51 ha with 592.668 vine trees that can produce 14 841 tons of grapes. The main grape producers in Buleleng are: District Banjar (6486 tons), District Seririt (4501 tons) and the District of Gerogak (3851 tons). The current issue that they face is grapes production is decreasing (Anon, 2009).

Horticulture grapes profile needs to be prepared for a proper development which based on 6 (six) pillar horticulture development, namely: 1) development of the horticulture agribusiness, 2) implementation of supply chain management (SCM), 3) application of good agricultural cultivation (GAP) and (SOP), 4) facilitation of integrated horticultural investment, 5) institutional development efforts, and 6) an increase in consumption and exports (Anonymous, 2008).

Six pillars development of horticulture is chosen because it is able to overcome various problems to increase production, quality and competitiveness of horticultural products. The all six programs are integral, interrelated and dependent to each other. These six pillars become priority in developing horticultural activities. It

carried out simultaneously and integrated between the central, provincial and district levels to facilitate and simplify access to the private sector / entrepreneurs (Anonymous, 2008). The aim of this study is to determine the profile of grape horticulture cultivation in Buleleng. Data base of grapes horticulture area development in Buleleng as a scientific information is expected from this research.

2. RESEARCH METHOD

This research uses purposive sampling method to determine sample location. Respondents consisted of farmers, stakeholders, local collectors, village collectors, wholesalers, and related institutions which are determined by a simple random sampling. The study sites are in the District of Banjar, District of Seririt and District of Gerokgak Buleleng. This study begins from December 2010 until February 2011. Source of data used in this study is the primary data and secondary data.

3. RESULTS AND DISCUSSION

3.1. Development of Horticulture Agribusiness Areas.

The purpose of developing horticulture agribusiness area is to increase production, productivity and quality of agricultural products. An average of 78.88 % respondents said that the development of horticulture area was compatible while 20.00% of the respondents said it was incompatible as can be seen in table 1. Around 73% of the respondents said that there has been no previous study done because the involvement of relevant agencies/stakeholders to set the agribusiness area is only 40%. In relation to the potential development of the grapes commodities area, 46.6% the respondents said there is no socialization and training from BPTP or training centers. 40% of respondents thought it was because of the lack of grapes post-harvest facilities which were necessary to maintain grapes quality.

Table 1. The Average of Respondent's Opinion in The Development of Grape Horticulture Area.

No	Question	The Opinions		
		Yes (%)	No (%)	in pro-cess (%)
1	The existence of horticultural agribusiness area in compliance with RUTR	100	-	-
2	The study of the agribusiness area	13.3	73.3	13.33
3	The involvement of relevant institutions/stakeholders to set horticultural agribusiness area	40	60	-
4	Coordination/socialization with regional districts	93.3	6.7	-
5	Identification of potential and agro-climate conditions	100	-	-
6	Potential areas identification for grape cultivation in Buleleng	53.4	46.6	-
7	Identification of grape harvest period in Buleleng	93.3	6.7	-
8	Identification of irrigation infrastructure and facilities in the region	100	-	-
9	Identification of road infrastructure and facilities in the region	100	-	-
10	Identification of post-harvest facili- ties and infrastructure in the region	60	40	-
11	Identification of grape market chain in Buleleng	100	-	-
12	Market identification	93.3	6,7	-
	Average	**78.88**	**20.0**	**1.12**

3.2. Application of Good Agriculture Practices (GAP) & Standard Operating Procedure (SOP)

Application of GAP/SOP becomes a general guide for fruit cultivation especially grapes. The average value of respondents' opinions can be seen in table 2. 68.88% of the respondents said that they already applied GAP/SOP on the grapes commodity while 29.63% said that they had not applied GAP/SOP which 86.7% of respondents believe it was because the government had not reproduced and distributed the manual book of GAP to the farmers' groups. It is only 60% of respondents that already implemented SOP step by step and met the standards while 60% of

respondents had problems in implementing SOP. There is 60% of respondents who did not have the farmer group partnership in the implementation of GAP/SOP with the private sector. These things lead to the lack of application of the GAP/SOP.

Tabel 2. The Average of Respondent's Opinion in Relation to the Implementation of GAP and SOP

No	Question	The opinions		
		Yes (%)	No (%)	in pro-cess (%)
1	Is there any GAP implementation to the institution and stakeholders?	100	-	-
2	Has government reproduced and distributed the book of GAP implementation to farmers' groups	13.3	86.7	-
3	In the implementation GAP/SOP, are there any trained personnel?	93.3	6.7	-
4	In the implementation GAP/SOP, is there any sample farm available?	80	13.3	6.7
5	In the implementation SOP, are the steps already meet the standards in accordance to the guidelines that have been made?	60	33.3	6.7
6	Is there any obstacle in the implementation SOP?	60	40	-
7	Is there any Direction for running GAP /SOP farm?	100	-	-
8	Is there any partnership between the farmer group that implement GAP/SOP with the private sector?	46.7	53.3	-
9	In the implementation GAP/SOP, has the Provincial Agriculture Office registered GAP /SOP farm to the expand the implementation GAP/SOP	66.7	33.3	-
	Average	**68.88**	**29.6**	**1.49**

3.3. Implementation of Supply Chain Management (SCM)

Table 3 shows the average value of respondents who has implemented supply chain management as much as 59.10% while around 40.90% hasn't. It also shows that the most respondents answered no for the questions number 1 until 9. In general, this situation shows that the supply chain has not been well identified and inefficient. This involves: market, market chain, market participants, the condition of the market chain, survey of consumer desire, the price received by farmers and payment systems. This condition certainly brings some disadvantages for the farmers and makes the market and commodity prices become not transparent. This also causes a decline in the number of grapes production.

Table 3. The Average of Respondent's Opinion on The Implementation of Supply Chain Management

No	Question	The opinions		
		Yes (%)	No (%)	in pro -cess (%)
1	Identification of the commodities market goals	26.7	73.3	-
2	Identification of grape's market supply chain	26.7	73.3	-
3	Are there any business agents who have roles in grape supply chain	100	-	-
4	Does the supply chain condition of grape commodity market have been efficient, transparent and the communication between actors has been going well	20	80	-
5	Is there any market survey that has ever done to find out the willingness of consumers towards the quality of the grapes	20	80	-
6	Does the grapes have been fulfilling customer needs in terms of price and quality	33.3	66.7	-
7	Does the agent in each supply chain have received a fair price	20	80	-
8	Does the grape have high selling price to the dealers/ brokers /collectors	6.7	93.3	-
9	does payment system in supply chain have been running well (do not harm the manufacturer)	46.6	53.4	-
10	Infrastructure condition off arm roads	100	-	-

Table 3. The Average of Respondent's Opinion on The Implementation of Supply Chain Management (Continued)

No	Question	The opinions		
		Yes (%)	No (%)	in pro -cess (%)
11	The road condition to the farm	93.3	6.7	-
12	Is the market infrastructure available	100	-	-
13	Is there any institutions avalaible in each supply chain	100	-	-
14	Is there any facilities and infrastructure available to facilitate and support the supply chain	93.3	6.7	-
15	The availability of communication system and networking	100	-	
	Average	**59.1**	**40.9**	**-**

3.4. Implementation of the integrated facilities horticulture investment

Integrated Facilitation of Horticulture Investment (IFHI) is a concept used to create a conducive business climate in the field of horticulture that can simultaneously improve product's competitiveness. Table 4 shows the average value of respondent's opinions on the IFHI. Around 64.18%of the respondent had applied IFHI while 33.32% had not applied it yet. Table 4 shows that IFHI had not been fully implemented because 66.7% of respondents said that there was no data available on the profile of grape region, 73.3 % said that there was no data on the design of the area and 80% said that there was no publicity about the design. However, 75.4% of respondents claimed that public service facilities were available.

Table 4. The Average of Respondent's Opinion on IFHI

No	Question	Opinion		
		Yes (%)	No (%)	in pro-cess (%)
1	Area profile	33.3	66.7	-
2	The design of area development	6.7	73.3	20
3	Are there any publications and Design of Road Map development of the area from the Department of Agriculture	-	80	20
4	Are public service facilities available			
	Provincial Highways	100	-	-
	District Road	100	-	-
	The village road	100	-	-
	Plantation Road	93.3	6.7	-
	Irrigation infrastructure	100	-	-
	Saprodi service	73.3	26.7	-
	The financial services (bank / nonbank)	80	20	-
	Transportation services	93.3	6.7	-
	The communication and information services	100	-	-
	Technology Services	6.7	93.3	-
	marketing/trade services	937	6.3	-
	licensing services	33,3	66.7	-
	Land services and Quarantine	13.3	86.7	-
	average	**64.18**	**33.32**	**2.5**

The high percentage in terms of technology (93.3%), licenses (66.7%) and quarantine services (86.7%) are due to the lack of socialization from the government and the lack of providing facilitator for relevant learning.

3.5 Development of institutions

Table 5 shows the average respondents' opinions on the institutions development. Only 19.99 % of the respondents said that the institutions have developed while 79.18% of respondents said it has not developed yet. The farmer group is still limited in developing grape commodity. The institutional development only formed in the group of farmers and groups of farmers' groups (Gapoktan), but no networking or partnerships between them with merchant/businessman. Farmers were also lacking institutional role in the supply chain, as well as the merchants association. This situation suggests that institutional development only occurs at the level of farmer group and limited to the commodity, while the institutions development of the others has been done but in small percentage. This causes the grape commodity does not have clear development, because the development of institutions is only 19.19% done

Table 5. The Average of Respondent's Opinion in The Institution Development

No	Question	The Opinions		
		Yes (%)	No (%)	In pro-cess (%)
1	Is there any existance of farmers group to develop commodities in the region	73.3	26.7	-
2	The presence group of farmer group (Gapoktan) in getting the best commodity	33.3	66.7	-
3	Networking among farmer group	6.7	93.3	-
4	Partnerships between farmer's groups with the merchant/business man	13.3	80	6.7
5	The role of farmers institutions in supply chain	20	80	-
6	Meetings between the farmers-farmer group /associations farmers (Gapoktan) with traders associations	13.3	86.7	-
7	Traders association in the region	-	100	-
8	Farmers partnerships institution with P4S	-	100	-
	Average	**19.19**	**79.18**	**0.83**

3.6. Increased and accelerated consumption of horticultural exports

Table 6. The Average Respondents' Opinions on The Improvement of Horticultural Consumption

No	Question	The opinions		
		Yes (%)	No (%)	In process (%)
1	Land availability to develop commodity	73.3	26.7	-
2	Manufacturers understand the types of product of consumer necessary	73.3	20	6.7
3	Manufacturers understand the volume accordance with the consumer required	-	93.3	6.7
4	Manufacturers understand the quality products accordance with the consumer required	33.3	60	6.7
5	Manufacturers knows the needs and the timing required by consumers.	-	93.3	6.7
6	Infrastructure availability for distribution of products	73.3	26.7	-
7	Facilities of transportation availability for fresh produce.	86.7	13.3	-
8	Producers know the delivery time to the market.	13.3	86.7	-
9	Producers know the volume of market demand.	26.7	73.3	-

Table 6. The Average Respondents' Opinions on The Improvement of Horticultural Consumption (Continued)

No	Question	The opinions		
		Yes (%)	No (%)	In process (%)
10	Packaging guarantee product quality and freshness of the product	66.7	33.3	-
11	Regulations availability to support the distribution	6.7	93.3	-
12	Marketing facilities available within easy reach	80	20	-
13	Products always available on the market.	13.3	86.7	-
14	Promotion of horticultural products	20	53.3	26.7
15	Socialization of the health benefits of products	13.3	60	26.7
16	Product available with reasonable prices	73.3	26.7	-
17	The product packaging in accordance with the price of the product	66.7	33.3	-
18	No charges which make expensive price of product	73.3	26.7	-
	average	**44.06**	**51.48**	**4.46**

Table 6 shows the average respondents' opinions on the improvement of horticultural consumption. as much as 44.06% said there was an increase, 51.48% said there was no improvement. No increase in grape consumption is caused by the unclear market and commodity supply chain (pillar 3),. It results in resulting in unclear production volume, product quality and production time. These conditions have impacts on the delivery time, the volume of requests, the rules of distribution and availability of products on the market.

Table 7. The Average of Respondents Opinion in Increasing The Acceleration of Export Commodity

No	Question	The opinions		
		Yes (%)	No (%)	In pro-cess (%)
1	Land availability to develop export commodities	20	80	-
2	Manufacturers understand the standard of quality of export market	-	100	-
3	Producer know the demand from the country export destinations	66.7	33.3	-
4	Committed exporters	-	100	-
5	Exporters understand the procedure of export of horticultural commodities in each country of destination	-	100	-
6	Exporters know the quality standards of each country's export destination	-	100	-
7	Exporter provide training to the manufacturers	-	100	-
8	Exporter knows the needs and the timing of horticultural commodities in the country of export destination	-	100	-
9	The availability of infrastructure to facilitate the distribution of export product	-	100	-
10	The availability of registered packing houses	-	100	-
11	The availability storage area	-	100	-
12	The availability of the adequate transportation facilities	40	60	-

Table 7. The Average of Respondents Opinion in Increasing The Acceleration of Export Commodity (Continued)

No	Question	The opinions		
		Yes (%)	No (%)	In pro-cess (%)
13	The Availability of information on regulations regarding the export procedure of export destination countries	-	100	-
14	The availability of SPS requirements	-	100	-
15	Protocol has been developed for horticulture exports	-	100	-
16	The availability of exporters partners in the export country destination	-	100	-
	average	**7.91**	**92.09**	

The campaign and the benefits of the product are expected to increase the consumption. The availability of infrastructure, good transportation and distribution of the product will also support the development of grapes commodity.

Table 7 shows that only 7.91% of the respondents said that there was an increase in the exports commodity accelerations and 92.09% said there was no acceleration. The results showed that there were only 3 out of 16 that that can be fulfilled by the respondents with the percentage of 7.91%. There are 13 essential components with the percentage of 92.09% which should be prepared to support the acceleration of exports as shown in Table 7. The situation indicates that grape commodities are not ready to be exported.

CONCLUSSIONS

1. The results shows the average opinion of the respondents who declared compatibility and incompatibility of the program: 1)the development of horticulture 78.88% and 20.00%, 2) the implementation GAP/SOP 68.88% and29.63%, 3) the implementation of supply chain management 59.10% and 40.90%, 4) the implementation of integrated facilities horticulture investment 64.18% and 33.32%, 5)institutions development 19.99% and 79.18%, 6a) increase in consumer horticulture 44.06 % and 51.48%, while 6b) on the acceleration of exports of 7.91% and 92.09%.
2. Based on the implementation of the six pillars of the development program, only four programs: 1) the development of horticulture area, 2) the implementation GAP/SOP, 3) the implementation of supply chain management, and 4) the implementation an integrated facilities horticultural investment that have carried out an average of 67.76% compliance. Two programs, namely 5) institutional development, and 6) increased consumption of horticultural exports in the implementation and acceleration have lower average of 22.99% compliance.

Suggestions

Based on this research, it is suggested that there is a need of continuity in developing and socializing horticulture sustainable development and dissemination. The programs that need to be fostered are: horticulture development program and the increased of horticulture consumption and horticultural exports acceleration.

ACKNOWLEDGEMENT

Our thanks to the Provincial Agriculture Office of Bali which has funded this research.

REFERENCES

Anonymous, 2006. *Kebijakan Pembangunan Pertanian Pemerintah Kabupaten Buleleng (Strategi Pengelolaan Pertanian Lahan Kering).* Paper presented at the Workshop on Stabilization and Synchronization Primatani, 12-13 July 2006. Buleleng District Government. Bappeda

Anonymous, 2008. *Membangun Hortikultura Berdasarkan Enam Pilar Pengembangan.* Directorate General of Horticulture. Department of Agriculture, Jakarta

Anonymous, 2010, *Buah Anggur sumber antioksidan.* (http://E:/anti aging/ buah anggur sumber anti oksidan) Accessed on October 12, 2010.

Anonymous, 2010. *Sistem Pertanian Organik Pada Tanaman Anggur Di Kabupaten Buleleng*. Department of Agriculture and Animal Husbandry. Buleleng District Government.

Christopher M, 1998. *Logistics and Supply Chain Management: trategies for Reducing Cost and Improving Services*. London: Prentice-Hall, Inc.

Irawan, B. 2003. *Membangun Agribisnis Hortikultura Terintegrasi dengan Basis Kawasan Pasar*. Agro Economic Research Forum. Research Center for Agricultural Economic and Social Development. Bogor

Pujawan, IN, 2005. Supply Chain Management. Guna Widya.

Setiadi. 2000. *Bertanam Anggur.* Penebar Swadaya Jakarta.