

ADOPTING GAPs FOR PRODUCING TEA- DIRECTION FOR SUSTAINABLE AGRICULTURAL DEVELOPMENT OF NORTHERN MIDLAND AND MOUNTAINOUS REGION IN VIETNAM

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Abstract

This research was conducted to investigate the empirical reasons for adopting GAP standard of tea household. Base on surveying by face-to-face interviews with randomly selected 443 tea-producing households in three provinces: Thai Nguyen, Yen Bai, Phu Tho of Vietnam, the findings out show that the motivation of protecting producer's health, protecting environment, good effect for the tea brand are the motivations for farmers selecting GAP standard and the difficult in selling GAPs tea, the duration of certificate is too short drive in stop applying GAP standard. At last, some solutions were recommended according to these found out.

Keyword: Tea, GAP standard, Sustainable agriculture, Northern midland and Mountainous region, Vietnam

INTRODUCTION

According to Dinh (2011), "Sustainable agriculture development is a development model that meets the general economic growth requirements but does not depress the natural environment and human, at the same time ensures sustainable livelihoods above the poverty line for rural people".

The implementation of agricultural growth through advanced production methods, the application of new techniques but the abuse of fertilizers and chemicals in agricultural production will degrade the environment in the long run. To solve this problem, agricultural production must apply new techniques to protect ecological environment. With the objective of developing sustainable agriculture and protecting the environment and the health of both

producers and consumers, many countries around the world have set up the Good Agricultural Practice for agricultural production such as GlobalGAP, JGAP, QGAP, and VietGAP...

VietGAP and others GAPs have adopted in producing agriculture of Vietnam since 2008, after ten years of implementing this standard for tea, beside the positive results such as GAP standard and its benefit were known by amount of farmers

There are certain percentages of agricultural households applying and maintaining this standard for their tea, however, over 90% of tea area has not been applied this standard. The consequences will not be fully realized if agricultural development does not emphasize more on the direction of sustainable development with the production methods associated with environmental protection. This study was conducted to assess the status of the tea production applying GAPs in the Northern Midlands and Mountains, the biggest tea areas region in Vietnam. Thereby identify the causes of the situation and based on the results of the study propose some solutions.

This paper is organized by 4 sections: Section 1 is introduction, section 2 is methodology and data, section 3 is results, section 4 is conclusion and recommendation.

LITERATURE REVIEW

Bull (1982) revealed that using irrational of insecticides has led to poisoning, specifically 10,000 people die from pesticide poisoning each year in developing countries. If agricultural growth is undertaken by the ways that make environment degradation, the health and nutritional status of rural residents will be directly affected (Braun, 1991). So, new producing technologies associated protect ecological environment is needed. According to FAO (2003) "GAPs is a set of principles, regulations and technical recommendations applicable to production, processing and food transport, addressing human health care, environment protection and improvement of worker conditions and their families".

Adopting GAPs in agricultural producing is one of the topic was found in previous studies. Researching on the factors affected to production units' selection for agricultural products in Vietnam such as vegetable of Hong Trang (2016), grape and apple (Quyet Thang, 2018), tea (Nhu trang et al, 2018) or pineapple in Thailand (Sriwichailamphan et al, 2008). Base on quantitative methodology, these researches have pointed out two group factors affected to adopting GAP standard for producing agricultural product that are internal group factor and external group factor of production units.

Researching on the motivation of applying GAP standard has research of Mudalige (2005), Hollerance et al (1999), Hobbs (2003), Wanamolee (2008)... These researches

revealed that the motivation for adopting GAPs of agricultural production units are economic, rule of government, protecting environment.

Some of researches on the awareness of farmers about GAPs standard, Pongthong Pongvinyoo et al (2014), Vu et al (2016), the findings out that almost of all farmers have positive attitude with aspects of GAPs, 88,7% candidates supposed that applying GAPs standard is one of the sustainable practice for producing Lychee in future (Vu et al, 2016).

By using differences approaches, the previous studies were conducted on the agricultural production applying GAPs standard, however, there have no study which investigated specifically in the reason why farmer household have not yet adopt GAPs, or stop applying GAPs standard for their production. Thus, this research will fill up this gap research.

METHODOLOGY

Research areas

The Northern Midland and Mountainous (NMM) region is the largest tea-producing areas in Vietnam and its total tea-planting areas is 96526.9 hectares (GSO, 2017). This region includes provinces that are well-known in terms of the quality of tea products and the tea-exporter such as Thai Nguyen, Phu Tho, Yen Bai, Tuyen Quang, Ha Giang, Son La...Based on the total tea-planting areas and areas of GAP tea, three provinces are selected, including Thai Nguyen, Yen Bai, and Phu Tho where counted biggest GAP tea area of this region.

Figure 1: Selected provinces in the surveyed sample



Source: Ton (2012)

Thai Nguyen province is known as the second largest tea-growing areas of Vietnam with 21361 ha, and Tan Cuong Tea is a well-known brand, which is one of the five products granted the geographical indications in Vietnam. Along with Thai Nguyen, Yen Bai and Phu Tho provinces are located in the center of the region with tea-growing areas of 11000 ha and 16000 ha, respectively.

According to the development master plan on tea production by 2020, total areas of GAP tea of the region reach to 28971 ha, of which the GAP tea areas of the three selected provinces are 17300 hectares, in which Thai Nguyen is 2000 hectares, Phu Tho is 6500, Yen Bai is 8800 hectares, and it accounts for 59.71% of the total areas producing GAP tea in Vietnam.

Data collection approach

In this paper, both primary and secondary data were used. The primary data were collected through the survey in Thai Nguyen, Yen Bai, Phu Tho provinces including both adoption of the GAP standards and the traditional manner in the these provinces. In each province, a district and three communes are selected to make the surveyed sample of nine communes. The sample size is determined by applying sample size calculator provided in Nguyen et al. (2015). The suggested sample size is 384, but the actual sample size includes 443 tea-producing households. The survey is conducted by face-to-face interviews with randomly selected households.

The secondary data were collected from the records of Ministry of Agriculture and Rural Development of Vietnam (Mard), the statistic from VietGAP.com, statistical yearbook.

Analytical approach

This paper used descriptive statistic methodology to analyze the reality, the reasons of producing tea households and traditional manners selection in three selected provinces. Base on the found out, propose some solutions to maintain and develop the model of GAP tea in Northern midland and mountainous region.

Data description

A survey was conducted to collection data with 443 tea-producing households. The survey was conducted by face-to-face interviews with randomly selected households. Description of the surveyed sample is presented in Table 1.

Table 1: Description of the surveyed sample

	Mean	Std. Dev.	Min	Max
Thai Nguyen province (%)	45.6	0.4986	0	1
Yen Bai province (%)	23.7	0.4257	0	1
Phu Tho province (%)	30.7	0.4618	0	1
Male household head	53.5	0.4993	0	1
Age of household head (year)	47.8	8.0798	26	69
Kinh groups (%)	74.9	0.4338	0	1
High school education and above (%)	34.3	0.4753	0	1
Member of social political organizations (%)	50.8	0.5005	0	1
Household Laborers (labor)	3.8	1.0334	1	6
Distance to district center (km)	15.9	6.9192	1.3	32
GAP adoption (%)	44.5	0.4975	0	1

The surveyed sample consists of 443 tea-producing households located in the three selected provinces, including Thai Nguyen (45.6%), Phu Tho (30.7%) and Yen Bai (23.7%). Of which, 53.5% of household heads are male, and 75% of surveyed household head are Kinh ethnic group. 34.3% of the surveyed household heads obtain high school education and above, and 51% of them are members of social-political organizations at communal and village levels. In the sample, 44.5% of tea-producing households are applying the GAP standards in their tea production.

RESULTS

Areas of tea GAP

Table 2: Areas of tea GAP in compare reality with plan

Contents	Tea areas in 2017	Tea areas plan to 2020	Tea GAP areas in 2018	Portion of planning GAP tea/Tea areas in 2017	Portion of real GAP tea/Tea areas in 2017
Unit	Ha	Ha	Ha	%	%
Value	96526.9	28971	511.404	30.01	0.53

Source: Vietgap.com (2018) and Mard (2017)

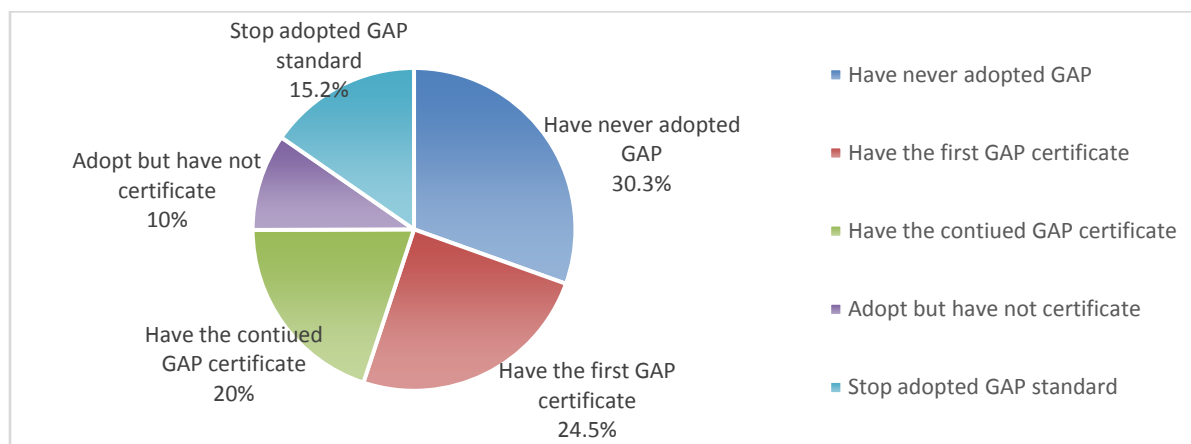
According to the statistical yearbook, the total areas of Northern midland and Mountainous region is 96.527ha, in which, the areas of GAP tea certificated are 511.404 ha (VietGAP.com,

entered 20/3/2018) this counted for 0.53% total general tea areas. This volume is so low in compared with planed areas (28971 ha).

The portion of adopting GAP standard

In 443 observations, 30.3% of household have never apply GAPs standard, 25.2% stop adopted GAPs, 44.5% applying GAPs (24.5% household are the first time adoption, 20% remaining are continued GAP certification).

Figure 2: Statistical Portion of surveyed households



Source: Authors' calculation

The cases of not adopted GAPs in 443 surveyed households are 55.5% and this calculator for reality of Northern midland and Mountainous region is over 99.4%. By interviewed these households, some reasons were discovered.

Reasons for not adopting GAPs

Table 3: Reasons for not adopted GAPs of tea household

	Reasons	People agree	Ratio (%)
1	Not informed about GAPs standard	111	82.22
2	Insufficient areas to apply GAP standards	66	48.89
3	With small areas, the changing of output will not remarkable	90	66.67
4	Their neighbours do not apply GAPs for producing tea	87	64.44
5	Household only plant and sell raw fresh tea with low price	82	60.74
6	Having no time to attend the workshop about GAPs	31	22.96
7	Customers have no demand GAP tea	114	84.44

8	Traditional tea have still been sold good	118	87.41
9	GAP tea is often broken by pests and diseases	1	0.741
10	Others reasons	3	2.222

Table 3...

Result from table 3 shown that the main reason of not adopted GAPs standard is the traditional tea has still been sold well with 87.41% agreements. The second reason have gotten big agreement is customer have no demand on GAPs tea (84.44%). The household have not gotten GAPs information or small areas... are the obstacle for their adoption.

Case of applying GAPs for tea of household

Table 4: Reasons for adopting GAPs of tea-producing household

Reasons	People agree	Ratio (%)
1 GAPs is safe for both producers and customers	196	99,5
2 Customers believe in the product of the household	195	98,98
3 Better in sale	109	55,3
4 Good effect for the tea brand of the household	138	70,05
5 Environment become more fresh	196	99.5
6 Higher price	145	73,6
7 Oder of customers about GAP tea	96	48,73
8 Others reasons	50	25,38

In case of household which adopted GAPs, 99.5% household heads agree that GAPs is safe for producers and customers, the similar agreement rate with the idea that GAPs help environment become fresher. 98,98% of household heads suppose that GAPs will retain the customers' believe about their product. Beside that, the higher price and better in sale are the main reasons explain why farmers have selected GAPs for producing tea. A lot of households said that "adopting GAPs make them get more know ledges about safe technical producing, also.

Case of stop applying GAPs for tea of household

Table 5: Reason for stop applying GAPs

Reasons	People agree	Ratio (%)
1 Complicated process, tough requirement	41	36.94
2 Registration procedures are cumbersome	72	36

3	Difficulty in selling	70	35
4	There are no remarkable differences in product prices	94	47
5	Examining strictly	2	1
6	Expiry date of the certificate is short	71	35.5
7	Others reasons	42	21

Table 5...

Difficulty in selling products, unchanging price, respectively 35% and 47% of stop applying GAPs standard complained that to adopt GAPs for tea, they have invested in their fields with amount of money but the price of tea change slightly and there have no customers bought their GAP tea make their less motivation to continually adopt GAPs.

Complicated process, tough requirement, the technical requirements of the GAP standard includes a number of detailed, rigorous regulations that make it difficult for farmers to adopt the standard: recording farmer diary.

Expiry date of the certificate is short, 35.5% suggested that the duration of the certificate is too short, two years, which only make households similar with new process and still seeking markets for GAPs tea. Therefore, many households after the certificate expired have chosen not to continue to register extension of this standard certificate.

In addition to the reasons listed above, the lack of transparency of information on supporting has led to distrust of farmers with government officials, and high initial investment costs are also barriers to adopt and maintain GAP standards for tea production.

CONCLUSION AND RECOMMENDATIONS

Over the past 10 years, GAP standards have been applied to tea production. As a result, a small percentage of households have applied and maintained this standard for production, better quality tea products, the knowledge of safe tea production has communicated to many households.

Despite the achievement of the change in awareness and attitudes of tea growers with good agricultural practices, the percentage of households registering for GAP certification and maintaining this standard is too low. The majority of households have not applied. Many households have applied but do not continue to maintain when the certificates are expired... are some problems still exist.

GAP tea production is an indispensable trend to develop sustainable agriculture. Therefore, there should be measures to encourage households to promote and maintain this standard for tea production.

Supporting for tea-producing farmers in selling tea products. It is necessary to develop more advertising channels to transmit information about GAP tea products to consumers. It also improves awareness of benefits of adopting GAP standards in tea production and improves the understanding of consumers about products produced in accordance with safety standards. Currently, there have a small number of consumers interested in the GAP standard products, so it is necessary to develop social-network channels for tea GAP products such as YouTube, Face book, and Zalo to reach customers fast and widely.

Promoting the cooperation among small tea-planting area households. A limited tea-planting areas household meets difficulty to apply for GAP certification, thus the cooperation among them will make higher possibility taking GAP standards in tea production. In addition, the land for agricultural production in general and particularly for tea production should not be used for non-agricultural purposes to avoid losses of agricultural land and make less motivation applying GAP standard in tea production

Expanding the training programs for households located outside the GAP tea planned areas. Taking training courses helps to increase the probability of selecting the GAP standards in tea production. Currently many households' heads have never taken any training sessions about the GAP standards in tea production, while many tea-producing households want to be trained about this standard, but they have not yet been included because they are not in the GAP tea planned areas.

By using qualitative approach through face to face interview with tea households, some main reasons why household whether adopt or not adopt GAPs for their tea production were identified. The research's limitation is just listed the empirical reasons follow household's ideas that are not analyzed by quantitative methodology to test or estimate. Thus, this limitation is shed light on the idea for the next researches such as: estimating the level of factor affected to decision of tea households or tested the factor making different between GAPs tea households and traditional manner.

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