GREEN TRADE BARRIERS AND VIETNAM'S AGRICULTURAL AND FISHERY EXPORT

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Green barriers can produce both positive and negative impact on international trade. However, the number of these barriers keeps growing without any monitoring system. This research will analyse the impacts of green trade barriers on Vietnam and European Union trade relationship. The study presents an important observation: the requirements to upgrade technology to meet exactly the technical regulations and expenditure for conformity assessment actually increase the production costs for small and medium companies in the short-term. However, the proper adjustments to these requirements will bring about some long-term benefits. Understanding the Good Agriculture Practice will help to improve the quality of products as well as the productivity, and this will open an access to developed markets to gain higher profits.

Keywords: *green trade barrier, trade protectionism, environment protection, Good Agricultural Practices (GAP), Vietnam exports to European Union, value chain in Vietnam, Vietnam agricultural and fishery products.*

Overview of Green Trade Barriers

Green trade barriers are introduced in order to attract public and corporate awareness as well as to reduce environmental pollution. However, some developed countries and other actors have applied these regulations to control import from the developing countries, where environmental standards are lower. These barriers are also considered as non-tariff ones and there is no international organization or a common policy framework, which is powerful enough to enforce these barriers. Although the 1992 Earth Summit, the 1994 WTO Agreements, the 1996 World Food Summit and numerous multilateral environmental agreements have comprised major international frameworks, they have not reached consistency or coherence in balancing the objectives – environmental, economic, and social – of the world's diverse nations. Moreover, the difficulty in monitoring environmental problems also creates many challenges in applying green trade barriers. Despite the growing debates and controversies, the trend for imposing green regulations as a non-tariff barrier is upward.

The most advanced formation in terms of strict green barriers is the European Union (EU). This green rampart has exerted a tremendous impact upon imports from many countries all over the world including Vietnam. For example, only in 2002–2003, the EU rejected as many as 72 vessels of aquarium products from Vietnam on account of incompatibility with the EU green regulations on imported fish products. In spite of the public concern about these green barriers, there are quite a few researches in this subject, especially on the impact of green barriers on Vietnam agricultural and fishery trading with EU. This study is therefore an attempt to fill this gap in research.

There is no clear and widely accepted definition of a green trade barrier. In some contexts, the terms Trade-Related Environment Measures (TREMs) or Environment-

Related Trade Measures (ERTMs) are preferred. For example, in a survey on the experience of TREMs and ERTMs in APEC, the Economic Committee of APEC (1998) defines these two measures in the following way:

> Trade-related environment measures have a relatively wide coverage. They refer to environmental measures with significant trade effects, including laws, regulations, and administrative measures as well as regional and multilateral agreements that are formulated and implemented or signed by APEC member economies. Environment-related trade measures refer to national trade laws, regulations as well as administrative measures enacted to achieve a specific environmental goal or for environmental purposes, including trade-related measures adopted by individual economies pursuant to the multilateral environmental agreements. Examples of ERTMs include bans, restrictions, or permit requirements in respect of imports or exports.

Thus, while trade-related environment measures are multilateral and commonly agreed by the concerned parties, the environment-related trade measures are national. Both types can be materialized in policies either at internal or at bilateral level, and those policies are enforced through multilateral Free Trade Agreements (FTAs), and/or through Multilateral Environmental Agreements (MEAs) and controlled by the WTO. However, it is difficult to distinguish between these two types of measures. As explained in another study performed by APEC, 'The Impact of Environmental Regulation on Trade' (2009) is aimed at protecting the environment, but the lack of recognized definitions makes it difficult to differentiate them since some countries may have different interpretations of these measures.

WTO and its precedence – GATT – although having no official definition of TREMs, have often used this term in the documents and agreements. Because of this popularity and in order to stand at a neutral and objective point, in this study we regard green trade barriers *as trade-related measures including all restrictions imposed by a country or a group of countries on imported goods from other countries based on environmental concern*. This concern involves the threat to the environment of both implementing country and of the world as a whole. For example, the EU required exporters to minimize the amount of packaging waste and use recyclable materials in their products so that the consumption of these products does not create more burdens of solving trash and land degradation on EU, which affects their own environment. Besides, the EU also issues the directives preventing illegal, unreported and unregulated (IUU) fishing to deal with its threat to the survival of coastal communities all over the world.

Environment Protection or Trade Protectionism

While consensus on the necessity of environmental protection through the enforcement of green barriers has been reached, the protection and protectionism, in practice, are likely to be confused. Green rules can be abused and environmental issues are used as an excuse for trade protectionism. There have been many disputes on this issue in recent years. In such cases, some countries wanted to ban the import on environmental grounds, while exporting countries invoked their rights of non-discrimination in trade granted under the General Agreement on Tariffs and Trade (GATT) and other agreements under the World Trade Organization (WTO). A central issue in this conflict is the legitimacy of unilateral action and national decision-making under WTO law, as opposed to multilateral decision-making. Another line of conflict (often indistinguishable from the first) runs between the governments of the large developed markets in the

North, with their strong environmentalist movements, and the smaller trading nations, in particular in the developing world (Biermann 2001).

Regarding the former, one should remember that WTO is not an environment agency and WTO jurisprudence has affirmed that WTO rules do not take precedence over environmental concerns. Its main objective is to foster international trade and open markets. However, WTO rules permit members to take trade-restricting measures to protect their environment under specific conditions as mentioned in Article XX of GATT:

> Subject to the requirement that such measures are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade, nothing in this Agreement shall be construed to prevent the adoption or enforcement by any contracting party of measures: … *(b) necessary to protect human, animal or plant life or health; ... (g) relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production of consumption ...*

This exception can be ambiguous in some cases. According to Fiona Macmillan (2001), a measure will be 'necessary' to protect human, animal or plant life or health under the Article XX (b) if there are no alternative measures that are more consistent with GATT but WTO panel would be not suitably qualified to assess those alternative measures and, then, how to evaluate which measure is the least trade restrictive?

Besides, it is very difficult to interpret the expressions 'arbitrary discrimination', 'unjustifiable discrimination' and 'disguised restriction on international trade' due to the absence of any criteria for assessing arbitrariness, unjustifiability and disguise. Many people also have been confused by the phrase 'relating to' in the Article XX (g). 'Relating to' means 'primarily aimed at' but how about measures that have more than one significant aim, although one of which is conservation, if the non-conservation aim was regarded as being of more significance than the conservation aim?

Besides WTO Agreement, there are also two non-binding instruments, Agenda 21 and the Rio Declaration adopted at the 1992 United Nations Conference on Environmental and Development (UNCED), which stand at the intersection of trade, developmental and environmental issues. However, they face the same problems of ambiguous information as Article XX. For example, Rio Principle 12, the heart of the Rio Declaration provides:

> States should cooperate to promote a supportive and open international economic system that would lead to economic growth and sustainable development in all countries, to better address the problems of environmental degradation. Trade policy measures for environmental purposes should not constitute a means of arbitrary or unjustifiable discrimination or disguised restriction on international trade. Unilateral actions to deal with the environmental challenges outside the jurisdiction of the importing country should be avoided.

What amounts to arbitrary or unjustifiable discrimination, disguised restriction is still open to question. Moreover, the language of Principle 2 with the use of 'should', not 'shall' is quite discretionary. Despite this ambiguity, these words in GATT Article XX preamble were still used by other agreements such as Article 36 of the Treaty Establishing the European Economic Community. One conclusion may be drawn here is that the border line between protection and protectionism is quite vague, which leads

to the difficulty in monitoring them as well as settling disputes. As Clinton Administration's environmental review of NAFTA correctly points out '*the choice of the appropriate level of protection is a social value judgment. There is no requirement for a scientific basis for the level of protection because it is not a scientific judgment*'. When there is no concrete scientific evidence on these problems, every country will have different points of view and these controversial issues may lead to disputes and even trade wars, which can dramatically affect both sides' interests.

The second conflict between the governments of the large developed markets in the North and the smaller trading nations, in particular in the developing world in the South, is even more complicated. As Fiona Macmillan (2001) states, all developing countries are either strictly opposed or at least most reluctant to accept MEAs due to the costs they would face in complying with these obligations. Their fear is that these will be used to restrict developing countries' access to developed countries' markets. Huang Qing (2007), a researcher from China, a developing country, is even more frank in claiming that green barriers are a 'disguised' means of protectionism behind their morality facade. He asserts '… the rapid expansion of manufacturing industries in these countries [developing countries] rouses worries from developed countries. In this context, the developed nations put in place green and technological barriers one after another in a bid to hold an advantageous position over the competition'. He goes on to elaborate that green barriers weaken the competitive power of developing economies by adding additional costs to their export goods. He concludes that the green barriers are 'actually a new type of trade barrier'.

Meanwhile, the developed countries, as Frank Biermann (2001) explained, reasoned that MEA has been widely applied by the vast majority of WTO members. CITES, for example, has been ratified by 90 per cent of the WTO members (152 members) and is thus almost universally recognized as the general standard of behaviour in this issue area. Because of its wide application, one can safely assume that many WTO members that are parties to these multilateral environmental agreements do not view them as violating the spirit of GATT and being applied in a manner that would constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade. This disagreement in using green trade barriers may root from conflicts over standards. People in high-income countries may have better awareness of environment protection and require stricter compliance of products to environmental rules. In addition, to non-transboundary environmental impacts, which do not cross borders, every country has different optimal set of environmental standards. An optimal set of standards in Europe, for example, might be entirely different from an optimal set in North Africa or Central Asia due to budgets constraint and regulatory abilities.

However, as Neumayer (2001) said, the hostility towards practically any form of greening of multilateral investment and trade regimes is rooted in a much deeper frustration with the distribution of benefits in these multilateral regimes. In the view of developing countries, the developed countries benefit much more from these than they themselves do. In particular, they believe that the developed countries have benefited quite substantially from the Uruguay Round of trade negotiations on topics that they favour: intellectual property rights, investment, services, telecommunications, restriction of production and export subsidies, strengthening of anti-dumping measures, increased access to developing countries' market, to mention just a few. The developing countries on the other hand, have hardly benefited. Although WTO guaranteed them 'special and differential' treatment, they rightly complain that the special provisions of safeguarding their interests have largely been ineffectual in reality; the transitional periods have been too short for them to adjust to the requirements of the WTO agreements

and that the promised technical assistance has been too little and too unsystematic to strengthen their capacity to comply with trade obligations. Thus, it seems fair to say that developed countries have benefited much more from Uruguay Round than the developing countries.

Given this imbalance, one can understand why developing countries are desperate to seek access to developed countries' markets and show their great suspicion and outright hostility to any restriction of this access – even if it comes in the name of saving 'our common environment'.

Vietnam's Agricultural and Fishery Export to the EU

The EU green regulations on agricultural and fishery products

Mandatory regulations

Environmental regulations on agricultural and fishery products are mentioned in European Union Environment Product Legislation. Their goal is to protect community health and environment. They can be divided into two types: the regulations directly affecting environment such as packaging waste, organic food labelling, and the regulations having an indirect impact on environment but relating to people's health and food sanitary such as allowed maximum of pesticide residue in products.

The followings are some of popular regulations imposed on agricultural and fishery products. They are arranged from the most influential regulation on environment to the least one.

- Packaging waste: A Directive followed the packaging note in December 1994 (94/62/EC) requires the exporters to minimize the amount of packaging waste (transport packaging, surrounding packaging and sales packaging) and give preference to materials that are re-useable or recyclable.
- IUU Regulation: The European Community adopted a Regulation to prevent, deter and eliminate illegal, unreported and unregulated (IUU) fishing on 1 January 2010. In order to ensure that no products derived from IUU fishing appear on the Community market or on markets supplied from the Community, the Regulation seeks to ensure full traceability of all marine fishery products traded with the Community, by means of a catch certification scheme. The catch certification scheme covers both processed and unprocessed marine products and will improve cooperation between flag, market and processing states.
- Maximum pesticide residue levels: it is necessary to ensure that residues used in production should create no risk to humans. Maximum residue levels (MRLs) are therefore set by the European Commission to protect consumers from exposure to unacceptable levels of pesticides residues in food and feed. These Regulations directly concern public health. Yet, they also influence the environment because if pesticides are overused on food and plants, land cannot absorb these substances, which leads to degradation or contamination of water sources. Hence, pesticide residues are always of environmentalists' concern.
- Veterinary and zoo technical checks on live animals and products: Products from third countries are subject to checks to protect the health of citizens and animals inside the European Community. Based on Council Directive 97/78/EC of 18 December 1997, a documentary check by the veterinary staff of the border inspection post or by the competent authorities must be carried out for each consignment of products coming from third the countries. The products then undergo a physical check at the border inspection post situated at or in the immediate vicinity of an entry point into the European Union (EU). This scheme is to ensure the verification of compliance with feed and food law, animal health and animal welfare rules.

• Authorized food additives: the Council Directive 89/107/EEC of 21 December 1988 draws up a list of substances whose use is authorized to the exclusion of all others; a list of foodstuffs to which these substances may be added and the conditions under which they may be added, and restrictions which may be imposed in respect of technological purposes and rules concerning substances used as solvents including purity criteria where necessary. Food additives, like pesticide residue and veterinary checks, though belonging to food hygiene regulations, still have an indirect impact on environment. Growing, producing and consuming products with these overused substances can cause land erosion, water pollution, affect natural biodiversity and cause other serious environmental problems. Thus, to some extent, they can be regarded as environmental regulations on products.

If products from third countries do not meet the above-mentioned requirements, the EU imposes different sanction measures in the form of financial tools and administrative tools. The EU's generalized system of preferences (GSP) is a good example of financial tool. According to 1154/98/EC, GSP has tax incentives scheme to encourage trading environment-friendly products or the ones having good social performance (good working conditions, no abuse of young labor). If firms export such products to the EU countries, they can get 10–35 per cent tax off on agricultural products and 15–35 per cent tax off on industrial products. By contrast, depending on the degree of violation, the products violating the EU environmental regulations can be levied higher tax or even removed from the list of GSP's goods. In case of breaking the law of forest and sea protection, the EU can even abolish all GSP priority. Examples of administrative tools are quota cutting or ban on importing. For instance, when the EU imported shipment inspection found violations that may result in severe consequences such as causing widespread disease, these animals will be killed immediately at the port of shipment. In case of more serious violations, the EU will return to total inspection of import consignments from the violator.

Standards

In addition to compulsory requirements, the EU also has many voluntary environment standards like ISO 14000, EMAS and non-legislation requirements like eco-labelling. Though they are voluntary, if not complying them the exporting firms will face many difficulties in entering exporting markets. For the agricultural and fishery products, organic food labelling, GAP and EMAS, ISO 14000 seem to be the most popular requirements.

• Organic food labelling: Organic farming is an agricultural system that seeks to provide the consumers with fresh, tasty and authentic food while respecting natural life-cycle systems. To get organic products labels and logo, firms have to follow a strict certification process. Conventional farmers must first undergo a conversion period of a minimum of two years before they can begin producing agricultural goods that can be marketed as organic. Both farmers and processors must always follow the relevant rules contained in the EU Regulation. They are subject to inspections by the EU inspection bodies or authorities to ensure their compliance with organic legislation. After the two-year period successful operators are granted organic certification and their goods can be labelled as organic.

• Good Agricultural Practices (GAP): GAP is also a kind of organic farming but its benefits are more than that. It is a means to concretely contribute to environmental, economic and social sustainability of on-farm production resulting in safe and healthy food and non-food agricultural products. Every country has developed its own GAP standards, for example, like USGAP of the USA, EurepGAP of the EU, INDON GAP of In-

donesia and VietGAP of Vietnam. EUREPGAP is a global Scheme and Reference for Good Agricultural Practice that bases on the following standards:

– Food Safety: The standard is based on Food Safety criteria, derived from the application of general HACCP principles.

– Environment Protection: The standard concerns the Environmental Protection Good Agricultural Practices, which are designed to minimize negative impacts of agricultural production on the environment.

– Occupational Health, Safety and Welfare: The standard establishes a global level of occupational health and safety criteria on farms, as well as awareness and responsibility regarding socially related issues; however, it is not a substitute for in-depth audits on Corporate Social Responsibility.

– Animal Welfare (where applicable): The standard establishes a global level of animal welfare criteria on farms.

- Eco-Management and Audit Scheme (EMAS): The EU Eco-Management and Audit Scheme (EMAS) is a management tool for companies and other organizations to evaluate, report and improve their environmental performance. The scheme has been available for participation by companies since 1995 (Council Regulation EEC No 1836/93 of 29 June 1993). To receive EMAS registration an organization must proceed through the following steps:

– Conduct an environmental review considering all environmental aspects of the organization's activities, products and services, methods to assess these, its legal and regulatory framework and existing environmental management practices and procedures.

– In the light of the results of the review, establish an effective environmental management system aimed at achieving the organization's environmental policy defined by the top management. The management system needs to set responsibilities, objectives, means, operational procedures, training needs, monitoring and communication systems.

– Carry out an environmental audit assessing in particular the management system in place and conformity with the organization's policy and programme as well as compliance with relevant environmental regulatory requirements.

– Provide a statement of its environmental performance, which lays down the results achieved against the environmental objectives and the future steps to be undertaken in order to continuously improve the organization's environmental performance.

- ISO 14000: The International Standards Organization, have developed a series of voluntary standards and guidelines in the field of environmental management. Developed under ISO Technical Committee 207, the 14000 series of standards address the following aspects of environmental management: Environmental Management Systems (EN ISO 14001), Environmental Auditing and Related Investigations, Environmental Labels and Declarations, Environmental Performance Evaluation, Life Cycle Assessment and Terms and Definitions.

Impacts of the EU Green Trade Barriers on Vietnam Exporting

Negative impacts

Environmental regulations have created many challenges for the Vietnamese firms because many companies do not have modern technologies that are friendly to environ-

ment to meet the EU green requirements. According to a report made by Tan Duc Thao Company in Vietnam Trade and Investment Forum (January, 2008), among all factories in Vietnam, there are only ten per cent having environmental friendly technology but 76 per cent still utilizing old technology of 1960s, 75 per cent of this technology has run out of depreciation. During the period 2003–2005, the Department of Science Technology and Environment inspected 2,893 factories but 1,129 of which violated Environmental Protection Law.

Agriculture products fail seriously to meet maximum pesticide level of the EU. The inspection of Plant Protection, Ministry of Agriculture and Rural Development in 2006 showed that among 4,600 inspected farms, 59.8 per cent did not follow chemicals using process, 20.7 per cent did not meet the required time isolating, 10.31 per cent used substances not listed in permitted chemicals, 0.18 per cent used restraint drugs, 0.73 per cent used unknown origin drug. Of 373 tested vegetable samples, there were 33 samples (13.46 per cent) having amount of chemicals exceeding the permitted level. In 2008, 20 per cent of farms abused pesticide; nearly 60 per cent did not follow the prescribed technique.

With respect to products-relating live animals, according to the Department of Livestock Production (MARD), at present, there is only 45 per cent of slaughter cattle and poultry houses that have permission but 65 per cent have no sanitation facilities after slaughtering. The number of houses that use tap water accounts for 25 per cent. Meanwhile, under the supervision of the National Assembly Standing Committee, up to 16,512 small slaughters do not comply with the requirements of food hygiene. The Management Department of Agriculture, forestry and fishery (NAFIQAD) performed tests of antibiotic residues in meat which revealed that during first six months of the year, there was still nearly 4.9 per cent pork and 3.6 per cent chicken and ducks having antibiotic residues exceeding permitted level. In 2008, there were only 49 ISO 22000:2005 certificates on food safety management issued to Vietnamese firms.

Because of such poor technology and awareness, many of our export products have been inspected or even rejected by importing markets. In July 2002, the EU found imported fishery goods from Vietnam having the sign of violating veterinary checks requirement and having the amount of antibiotics over the permitted level. Thus, the EU inspected 100 per cent of our exporting products since September 2001. From September 2001 to February 2003, the EU destroyed and returned 76 fish vessels, which did not meet maximum antibiotics level. They also warned that if this situation happened again, the imported products from Vietnam would be put in the third group, which needs 100 per cent inspection. To cope with this situation, the Vietnamese authority temporarily banned six fishery suppliers who did not comply with the EU rules and warned that any firm having even a single vessel violating the EU rules will be removed from the list of permitted exporting fishery products companies to the EU.

In 2008, Vietnam food was notified 51 times by Rapid Alert System for Food and Feed in the threat of violating food hygiene regulations. In 2007, this number was only 42, including 31 cases of fishery products and 20 of agricultural products. The RASFF does not always make the right decision based on scientific evidence. In case of wrong conclusion, the cost will be great, especially for fishery products, which are easily to be destroyed and have high cost of preservation. Moreover, if information about the name of company is revealed, it will have serious impact on firms' profit. In ‘Clean Production for better products’ (CP4BP) project report (2008), at present the seafood companies have to pay USD 1,000 to get each consignment examined before export, which is costly given the financial capacity of most seafood companies. Moreover, the seafood exporters have

suffered large financial losses and have suffered reputation damage due to chemical and antibiotic residue that was found in Vietnamese seafood by foreign importers.

Many criteria tests are also very expensive and, therefore, make a significant increase in the product cost. Take, for example, ISO 14001. It gets much time and money to get this certificate. It takes at least eight months to meet compulsory requirements. And the cost to implement it can reach hundreds of millions dong, depending on production scale, method and labour costs. Given that almost all Vietnamese firms are small and medium size, the cost can become a great burden for them.

Likewise, it is very costly to get EUREP GAP or Global GAP: approximately 5000–7000 USD/per certificate. With this cost, the price will rise notably, which makes export products unaffordable to domestic and ordinary importing markets.

Suppose that a farmer has a pond with its own water supply and drainage channel. In order to meet the requirements of GAP, this farmer has to invest money to renovate the pond to kill germs, remove the transmission medium, such as crabs, water filtration and water treatment pond to ensure no pathogens. At the same time, he also has to spend more money to buy a certified clean shrimp. Hence, there is a significant growth in his expenses. According to NAFFIQAVED (2006), applying GAP increases the cost by 2.352 dong/kg in Ben Tre. This cost is mainly for analyzing chemicals residues and antibiotics level in and on shrimp products. To farms having no separate water supply and drainage channels, the expense is even higher, about 13.700 dong/kg as shown in the research made by NAFIQAVED (2006) in Khanh Hoa. This rise in cost will simultaneously raise the price by 20 per cent.

Many farmers, therefore, are afraid that the revenue may not cover the expenses and they are under the threat of great lost. It also explains why among 7,000 farmers registering to apply GAP there is operating large business, the small and medium enterprises just account for a very small rate. Although there are 1,198 farms having certificates of ecological shrimp growing with the total area of 4,000 ha, this number just accounts for 1.1 per cent of 369,094 shrimp growers in 2008. The same refers to agricultural products. In Binh Thuan, the first province applying EUREPGAP in growing dragon fruit, there is only 1.2 per cent of land certified with EUREPGAP. This number is too small to guarantee for high valued contracts. In Vietnam, there are only 3000 companies that have been issued international certificates like ISO, HACCP, SA 8000. These companies accounted for only 1.5 per cent of all operating businesses. Even in Ho Chi Minh City, the biggest city in Vietnam, this number was just three per cent. Although these certificates are not mandatory requirements to enter the EU markets, without them, firms will face many difficulties, especially in verifying their products quality. In this case, green barriers are really a burden for small and medium enterprises, which have low technology, lack of capital to apply international qualified management system.

Positive impacts

High cost, however, does not always have negative impact on enterprises. On the other hand, if high cost adds more value to products, the producers can increase the price. And in this case, their profit will rise dramatically.

The case of Good Agricultural Practices (GAP)

To enter the EU markets, it is necessary to produce agricultural and fishery products following the GAP. This certificate is somehow a green ticket to enter the developed markets where there are strict requirements of products quality and its impact on environment. Realizing this trend, in December 2005, the Vietnamese government, in an as-

sociation with USAID and AUSAID signed a contract with Southern Fruits Research Institute (SOFRI) to implement a project, which helps to introduce European GAP (EUREPGAP) to dragon fruit growers in Binh Thuan and Tien Giang. The aim of this project is to improve the quality of Vietnam dragon fruits complying with EUREPGAP so that our fruits can be exported to European and Southern American markets. Since these markets have very strict requirements of environment protection, safe for producers as well as consumers. Despite many challenges and difficulties, the initial results show potential success. The price of dragon fruit exporting to the EU and USA has increased to 4–5 $/kg, while the ordinary fruit is just sold at 2 $/kg, that is two-three times less. As Mr. Tran Ngoc Hiep, the chairman of Binh Thuan Dragon Fruit Association as well as the Director of Hoang Hau Company – the biggest dragon fruit exporting company in Vietnam said, during seven months after receiving EUREP GAP, the number of his company's consumers rocketed, especially in the European market. In the first six months of 2008, the volume of export to the EU was 500 tons, equivalent to total export in 2007. The price is obviously higher than uncertified dragon fruit.

Another case of the benefit of organic farming is about vegetables growers in Soc Son. They made a comparison between the cost and revenue of the normal farming and organic farming.

Table 1

Cost, revenue and profit from growing organic tomatoes and cabbages

Type Content	Tomatoes		Cabbages	
	Organic	Ordinary	Organic	Ordinary
Revenue	40 million dong/sao	20 million dong /sao*	4,000,000[đ]	3,500,000[đ]
Cost	922,000[đ]/field	945,000[đ]/field		
Profit	38,780,000[đ]	19,055,000[đ]		
Quantity			400 kg	1.4 tons

* 1 sao = 360 m^2

Source: http://www.kinhtenongthon.com.vn/printContent.aspx?ID=17204.

It is clear that organic farming creates higher profit but smaller quantity for farmers. Because of terrible flood in November 2011, the yield of organic vegetable was just 400 kg cabbage/field but the selling price was 10,000 dong/kg. Meanwhile, farmers harvested 1.4 tons of inorganic cabbage but just sold at 2.500 dong/kg. For tea and other agricultural products, we also see the same pattern. As Ms. Nguyen Thi Huong, the director of Van Tai Co, Ltd, which produces 'clean' exporting tea following GAP said about her company products of O Long and Hong Tra Tea, although they are very expensive (from 400,000 dong to 1 million dong) there is still an excess in demand while the conventional tea is just sold at 80,000–200,000 dong. Organic farming just utilizes natural resources such as using remnants of plants, animal waste to make fertilizer, making pesticide from herbs (wood vinegar, crushed leaves of Melia azedarach) so it lowers the cost. To some products, the input cost of organic farming is even 30 per cent lower than normal method. Ms. Nguyen Thi Thinh, a farmer in Vinh Phuc calculated that the cost of organic fertilizer for her vegetable crop is 70,000 dong/sao (1 sao = 360 m^2), equivalent to half of chemical fertilizers. Organic farming also helps to improve the productivity. According to Mr. Nguyen Moi, a grape grower in Ninh Thuan who has used organic farming for three seasons, thanks to this new kind method, his crop productivity has gone up gradually from 5 tons/ha, 9.5 tons/ha to 18 tons/ha and

the quality of the fruit is also better. In Binh Phuoc, it is also verified that the productivity of organic vegetables is two times higher than ordinary products.

In 2006, with the help of NORAD and Fishery Law Project, NAFIQAVED introduced GAP to aquaculture industry, starting with shrimp farmers in Tra Vinh and Binh Thuan. The initial result showed that the yield of households using GAP is 20–30 per cent higher than the conventional farming. Nha Be agricultural extension station, belonging to Ho Chi Minh extension center also applied GAP into shrimp farming with semi-intensive model at four households during four months from February 2009 to June 2009 within the area of three ha. The density in pond was 15 units/m^2, size 12 post, feeding with Tomboy industrial food. And the result was that each household yields two tons/ha/crop, the survival rate was 60–70 per cent. Fishes, whose weight is 70–60 kg, were sold at 60,000–80,000 dong/kg and the average profit was about 50–60 million dong/ha/crop.

In addition to increase in profit, good agriculture practice also helps enterprises expand their domestic as well as exporting markets. The food scares in developed countries, combined with the increasing awareness of health, diet and nutrition, has increased interest in organic food products. Sales of organic products are increasing in almost all countries of the EU. Organic and other certified products, as well as high quality specialties, are an especially good opportunity because conventional products are mass commodities where traded quantities are large and it is more difficult to compete. Take coffee as an example. Coffee is mainly consumed in the developed countries of the northern hemisphere and much less in the producing countries in the South. It is estimated that consumers in 11 major EU member states together used approximately 27.4 million kilograms of certified organic coffee every year and this number has risen constantly.

All examples above are good illustrations for the profitability of GAP to farmers and exporting companies. However, the benefit of GAP is more than that. Organic farming helps not only to protect their industry from the unscrupulous producers but also helps to strengthen vital skills among producers for whom organics offer a chance to participate in competitive higher-value trade. Traceability and production management are part of rigorous organic standards that can help smaller producers to compete in agricultural trade. Moreover, if domestic companies are compelled to apply green regulations like GAP, it will be fair to make foreign producers follow these rules. In Vietnam, there is still lack of environmental regulations imposed on import goods, leading to the import of unsafe products for consumers and environment by many foreign companies. Thus, it is necessary to have green regulations, which play the role of technical barriers to protect our own benefit.

In addition, GAP and green regulations also help us reach the goals of sustainable development. According to agriculture specialists, organic farming will keep the soil fertile for crop rotation, make the water source less pollutant, protect wild animals and biodiversity, save energy and scarce natural resources. Limited using chemicals also make the products safer for consumers.

In general, GAP helps to enhance the competitiveness of company's products, make the products reliable, create good image of a brand in customers' mind, expand domestic and exporting markets, increase revenue, decrease cost to raise profit and meet the goal of sustainable development.

From the case of GAP, we may draw a conclusion that if complying environment regulations, our export products are not only eligible for entering developed markets like the EU but also able to take the advantage of modern production methods to increase

profit and develop sustainably. Moreover, in the age of globalization, there is a tough competition between companies of different countries and the awareness of environment protection of people have improved significantly, enterprises should advance their technology to comply new rules of modern time instead of resisting them. If this situation happens, green regulation will be no more barriers but a tool for companies to increase their profit.

Conclusion

Green trade barriers can induce higher costs for enterprises, including the costs of complying the precise obligations and the conformity assessment. However, if high cost adds more value to products, applying modern technology helps improve quality of the products, obtaining ISO 14000 and other green certificate can attract more consumers of high environment consciousness, the producers will have power to increase the price and get more benefits. Thus, companies should be proactive in applying advanced technology so as to meet green regulations and improve their products competitiveness. Strengthening vertical and horizontal integration is also another effective measure to share the cost burden and control product quality. Government should also support enterprises by supplying them with update market information, increasing trade promotion, building a common standard system and creating a supporting mechanism. By doing so, our agricultural products will be able to break through barriers, increase our export products' competiveness in the world market, leading high profit in the future.

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