



**The Philippines—a National Case Study on  
Capacity Building: Enhancing the  
Competitiveness of Horticultural Exports  
through Compliance with International  
Environment and Health Standards**

A study conducted for the UNCTAD

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13 August 2004

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**P**hilippine horticultural exports collectively increased 10.23% in 2003 from the previous year, contributing USD 670.1 million to the nation's GDP<sup>1</sup>. In order to maintain growth, we must recognize that enhancing the competitiveness of exports is critical to the development of a nation's economy. In the Philippines, much effort has been invested into creating, devising, or uncovering innovative means to pave access for Philippine produce into the key export markets. But non-tariff barriers in terms of environmental and health requirements and sanitary and phytosanitary (SPS) measures serve as necessary impediments to exports. As these requirements require more resources, tangible and quantifiable or otherwise, expended onto production, they also ensure a certified level of quality, and they strengthen competitiveness in the long-term. This research therefore seeks to resolve how international environmental and health requirements actually smoothen and strengthen the entry of Philippine horticultural products in the international export markets.

Industrialization has been in constant growth and development around the world, and as such, the demand for natural resources has grown correspondingly great. Consequently however, these needs have led to the inevitable production of wastes, emissions, and other harmful bi-products of industrial innovation—all of which are hazardous or threatening to the environment. Clearly therefore, these have to be addressed urgently and effectively.

This is why in recent years, environmental advocates the world-over cannot over-emphasize the need to achieve **sustainable development**:

*“Sustainable development is a process of change in which exploitation of resources, the direction of investments, the orientation of technological development, and institutional change are all in harmony and enhance both current and future potential to meet human needs and aspirations. In other words: sustainable development is the development that meets the needs of the present, without compromising the ability of future generations to meet their own needs<sup>2</sup>.”*

And cognizant which such concerns, which are global in scope and reach, is that world institutions such as the World Trade Organization and other regional trade associations across the globe, have underscored the need to include the environment as an important issue in international trade. We can witness such execution through the following. First, through environmental legislation, policies have been formalized and institutionalized to effectively consider pre- and/or post-environmental effects of international trade transactions. And second, we can increasingly see that such policies are enacted through market forces such as environmental labels and management systems<sup>3</sup>.

### **The Philippine Horticulture Industry**

From the period 1999 up until 2003, horticultural exports from the Philippines comprised only 1.69% of total exports on average, and majority of it subsequently is that of fruits, which was 1.60% of total exports on average. The USD value or the free-on-board

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<sup>1</sup> Tradeline Philippines. Department of Trade and Industry (DTI). Republic of the Philippines. 2004.

<sup>2</sup> Centre for the Promotion of Imports from Developing Countries, [www.cbi.nl](http://www.cbi.nl), 2002.

<sup>3</sup> Ibid.

(FOB) value of the exports of fruits, vegetables, ornamental plants, and cutflowers increased 7.53% year-on-year (yoy) on average in the same period.

USD Value	1999	2000	2001	2002	2003
Processed Fruits	179,063,128	201,377,463	219,893,735	205,953,521	231,467,763
Processed Vegetables	4,302,220	3,547,692	3,587,283	4,749,102	5,461,763
Fresh Fruits	297,467,653	354,143,351	357,206,957	371,145,823	403,687,199
Fresh Vegetables	21,525,998	23,668,895	21,915,120	23,119,147	27,158,333
Cutflowers/Ornamental Plants	1,986,352	1,849,859	1,797,727	2,906,915	2,299,536
Horticulture: Sum	504,345,351	584,587,260	604,400,822	607,874,508	670,074,594

Source: Department of Trade and Industry (DTI), Republic of the Philippines

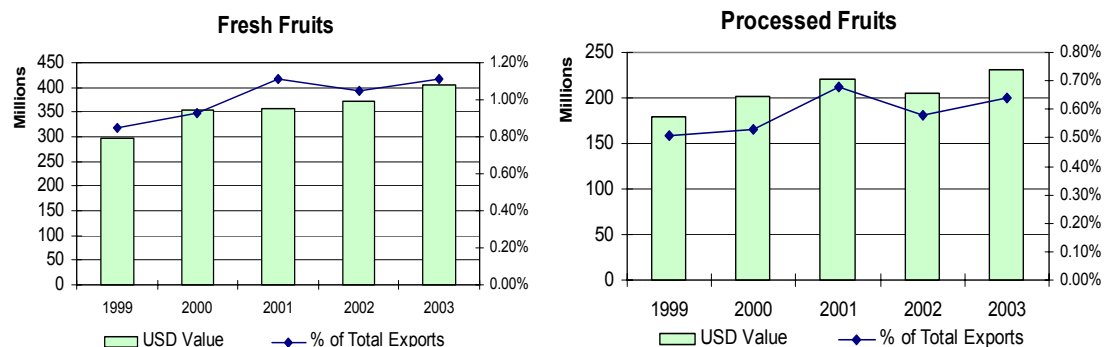
% of Total Exports	1999	2000	2001	2002	2003	AVE
Processed Fruits	0.51%	0.53%	0.68%	0.58%	0.64%	0.59%
Processed Vegetables	0.01%	0.01%	0.01%	0.01%	0.02%	0.01%
Fresh Fruits	0.85%	0.93%	1.11%	1.05%	1.11%	1.01%
Fresh Vegetables	0.07%	0.07%	0.07%	0.07%	0.07%	0.07%
Cutflowers/Ornamental Plants	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%
Horticulture: Sum	1.45%	1.55%	1.88%	1.72%	1.85%	1.69%

Source: Department of Trade and Industry (DTI), Republic of the Philippines

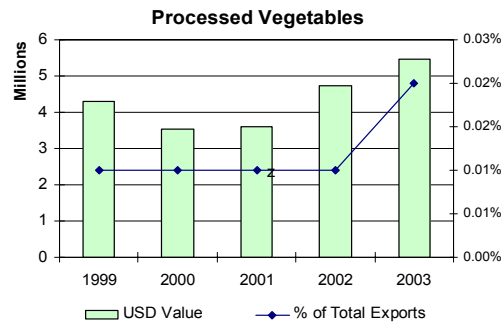
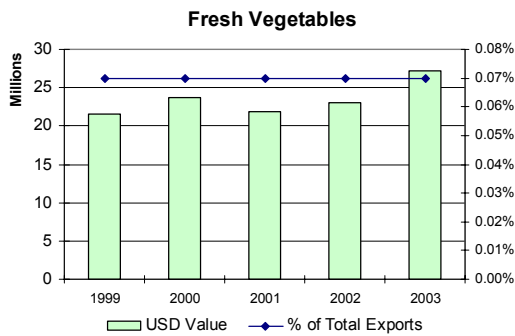
Growth Rate YoY	2000	2001	2002	2003	AVE
Processed Fruits	12.46%	9.19%	-6.34%	12.39%	6.93%
Processed Vegetables	-17.54%	1.12%	32.39%	15.01%	7.74%
Fresh Fruits	19.05%	0.87%	3.90%	8.77%	8.15%
Fresh Vegetables	9.95%	-7.41%	5.49%	17.47%	6.38%
Cutflowers/Ornamental Plants	-6.87%	-2.82%	61.70%	-20.89%	7.78%
Horticulture: Sum	15.91%	3.39%	0.57%	10.23%	7.53%

Source: Department of Trade and Industry (DTI), Republic of the Philippines

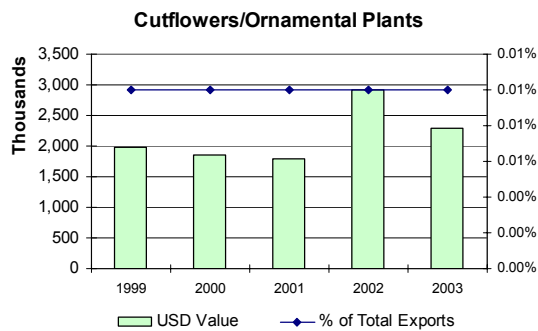
Moving onward with the above data, beginning with fruits, processed and fresh fruits combined constitute a majority of horticultural exports, accounting for 94% of total horticulture exports on average for the period under analysis. Total fruit exports has also been growing at an average rate of 15.07% in the same time period.



Exports of processed and fresh vegetables together has stayed around 5% as a percentage of total horticultural exports, and, certainly worthy of note, grew from a contraction of -7.58% yoy in 1999 to an acceleration of 32.48% yoy in 2003. On average for the past five years, total vegetables exports has grown 14.12%.



Exports of cutflowers and ornamental plants has posted volatile performance, though it has grown 7.78% on average for the period 1999 to 2003. This segment has remained below 1% of total horticultural exports.



## **Identification of Environmental and Health Requirements in Export Markets**

### *European Union*

The European Union, now with 25 member states, has taken into effect legislation that aims to reduce the negative environmental impact of products. This is called **environmental legislation**. Obviously, this kind of policy-making is importantly considered by exporters to the EU, since environmental legislation is mandatory and applicable to all products traded with or within its borders.

Alongside environmental legislation for products, standards are also being implemented to take processes into consideration—subsequently termed as process legislation. Since environmental impact was always being assessed in the level of the end-product, there has been increased awareness for the need to consider every environmental impact across the entire production chain. To illustrate, restrictions are employed on the amounts of industrial waste and air pollution caused by production. European importers are authorized to impose these EU-process legislations as binding standards to their overseas supplier. Tangentially, such restrictions encourage the use of process optimization, where alternative techniques are employed, and the use hazardous substances are reduced. It goes without saying that cleaner production is indirectly related to cleaner

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products, specifically since requirements in the end-product level can sometimes only be met through changes in the production process<sup>4</sup>.

Other requirements, such as environmental labels, codes of conduct, and management systems, have a direct impact on cleaner production measures. But these are not compulsory, and they often necessitate higher investment, financial-monetary or otherwise. These are recognized as voluntary because these are instruments used as a response to market incentives rather than to public regulation. For example, business partners, i.e. the importer, may require these instruments in view of rising and/or changing market demands. The supplier or exporter therefore sees these interests as incentives for compliance. In recent time however, there has been growing importance to adopt environmental labels, which were initially voluntary, as actual market requirements. Well-known examples are EKO (label for organic food) and ISO 14000 (a management system for continuous environmental improvement)<sup>5</sup>.

Now, many companies, which began with product development, undertake mounting efforts toward **ecodesign**, or environmentally sound product design. Here, the entire life cycle of the product is considered, and the reduction of negative environmental effects is achieved across the full production chain<sup>6</sup>.

Parallel to environmental policies, consumer health and safety issues have become more and more important in international trade. Authorities, consumers, and industries within the Union can be extremely sensitive to any negative impact a product may have during or after its use. Such issues become significantly relevant for those in the food sector, since, crises involving contaminated food or similar catastrophes are brought to public attention. Though legislative action may help, industries and producers themselves wish to address these potential dangers to ensure long-term public confidence in their produce. Many standards set prohibitive limits with regard to chemical use, and many others prescribe information about product conditions and processes through labels, e.g. GMO information. These kinds of marketing tools are often considered as “passports” for entry into the EU markets.

Very noteworthy—food industries themselves initiate programmes or codes to become more transparent in order to increase their capacity of certifying their products are safe and healthy. Retailers respond to negative public opinion on their products with standards on farm production, called the EUREPGAP standard, and the processing of food, the BRC standard. These standards merge environmental with health and safety standards (in fact, EUREPGAP even sets social standards). These standards are gaining ground worldwide, also because the European retailers who demand them are gaining influence<sup>7</sup>.

In 1999, the Euro-Retailer Produce Working Group or EUREPGAP was conceived and developed by leading European retailers to address the concerns of its members and certainly those of its customers. The key objective of this standard was the development of a framework for Good Agricultural Practice or GAP, in order to increase food safety by promoting sound agricultural practice mainly based on international standards. Compliant producers will adopt protocols on various stages of the production cycle, and even on management systems, which are aligned with internationally recognized environmental standards<sup>8</sup>. The implementation of the EUREPGAP therefore will ensure

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<sup>4</sup> Ibid.

<sup>5</sup> Ibid.

<sup>6</sup> Ibid.

<sup>7</sup> Ibid.

<sup>8</sup> Ibid.

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traceability from consumer to the field, covering several management systems such as that on the site, soil, fertilizer and pesticides, as well as worker health, safety, and welfare<sup>9</sup>. Currently moving forward, the EUREPGAP standard is developing into a system whereby certification is conducted by an independent third party<sup>10</sup>. In summary, the EUREPGAP has aimed to harmonize protocols for the production of fruits, vegetables, and flowers.

Consumers can see the combination of environmental and health and safety issues through the marketing of some environmental labels, e.g. organic or biodynamic labels, for food products. Currently, these are marketed in the EU as healthy food products, with environmentally sound aspects. In actuality, consumers in Europe are very health conscious, as with other developed states, and therefore these **environmental labels create added value**. Concurrent compliance with environmental and health and safety standards can assist entry into key markets within the EU.

#### *United States of America*

The United States government has for many years held in high regard the safety of its citizens as consumers. Several federal agencies, which furthermore continuously coordinate with one another, have been established to protect this primary interest.

Clearly as the foremost authority in cultivating, sustaining, and developing agricultural production in the United States, the **U.S. Department of Agriculture (USDA)** has established a number of programs to address the needs of producers and ensure the safety of consumers. Under the USDA, the **Agricultural Marketing Service (AMS)** has three primary functions, designed toward: (1) facilitating the marketing of agricultural produce, (2) certifying quality in the food supply for consumers, and (3) implementing fair trading practices, inclusive of enforcement. In reference to the second, AMS offers an independent, albeit federal and official, grading service to provide the relevant industries with “impartial, third-party certification of quality and the condition of any fresh or processed product<sup>11</sup>.” This capability offers apparent advantages for the agronomy, as this certification program can provide the basis for ensuring quality in produce, verifying compliance with contractual terms (in terms of production) in order to enhance marketing, and create ease with which to settle claims for damages incurred during transit and/or storage of the product.

More specifically, the AMS provides the following services:

- **Quality Standards:** Agricultural produce is comprised of an immense cluster of diverse commodities. Such an array of goods includes fruits and vegetables (fresh and processed), specialty crops, milk and other dairy products, livestock, poultry and eggs, cotton, tobacco, and organic products. Coordinating with the relevant industries, AMS develops, implements, and enforces quality standards for hundreds of these products.
- **Grading and Certification:** Parallel to quality standards, AMS provides a user-fee service for quality grading. This certification is based on the standards developed for each agricultural product. These services are often executed in conjunction and cooperation with other federal departments that specialize in agriculture.

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<sup>9</sup> Fintrac Harvest. Fall 2002.

<sup>10</sup> FAO. “Working Golden Fruit”. October 2001.

<sup>11</sup> Food and Agricultural Import Regulations and Standards Report (FAIRS), USDA, April 2001.

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- **Inspection of Fruits, Vegetables, and Nuts:** Specific agricultural goods (these include: fresh tomatoes, avocados, mangos, limes, oranges, green peppers, Irish potatoes, cucumbers, eggplants, dry onions, walnuts and fibers, walnuts and filberts, processed dates, prunes, raisins, and olives) must conform to import regulations relating to grade, size, quality, and maturity<sup>12</sup>. These particular commodities are subject to rigorous inspection, after which a certificate must be issued by the AMS to assure compliance with such import requirements.
  - **Agricultural Research Service (ARS):** The main purpose of the ARS is to serve as a centralized information hub for providing comprehensive data on agriculture. This service conducts statistical research on food consumption and to help in developing technology and expertise in solving agricultural problems that are technical and broad in scope.

The **Environmental Protection Agency (EPA)** is the US Government's environmental representative in matters dealing with the safety of foods. The EPA coordinates its action by integrating research, monitoring, standard-setting, and enforcement. For example, through the **Office of Pesticide Programs (OPP)**, the EPA determines the safety levels of newly developed pesticides, calculates allowable pesticide content or residues in agricultural foods. The EPA subsequently enforces these policies, and sets guidelines to be obeyed.

#### *Japan*

Being one of the world's largest economies, Japan enforces general import requirements and standards relating to environmental, health, and safety concerns, and which are set by the **Ministry of Health, Labor, and Welfare (MHLW)**. Imported foods that do not meet the requirements implemented by this agency will **not be allowed** entry. In the same regard, the **Ministry of Agriculture, Forestry and Fisheries (MAFF)** is also involved in food risk management, focusing on the area of food labeling, through the **Japan Agricultural standards (JAS) Law**, and animal and plant health protection, through a series of quarantine laws.

The JAS Law was revised in 2000, which requires labeling of<sup>13</sup>:

1. Place of origin for all perishable foods (produce, meat, seafood, dairy)
2. Ingredients derived from biotechnology- limited to 30 foods made from corn, soybeans and potato where the genetically modified content of the labeled ingredient exceeds 5%.
3. Organic labeling, including mandatory third-party certification for products labeled as "organic."

#### **A Commodity Case Study: Bananas**

The industry for bananas is certainly a major one in the Philippines. This commodity alone accounts for 0.4% of total GDP in 2001 statistics. That rate translates to a generation of export earnings of more than USD 250m annually. This industry also

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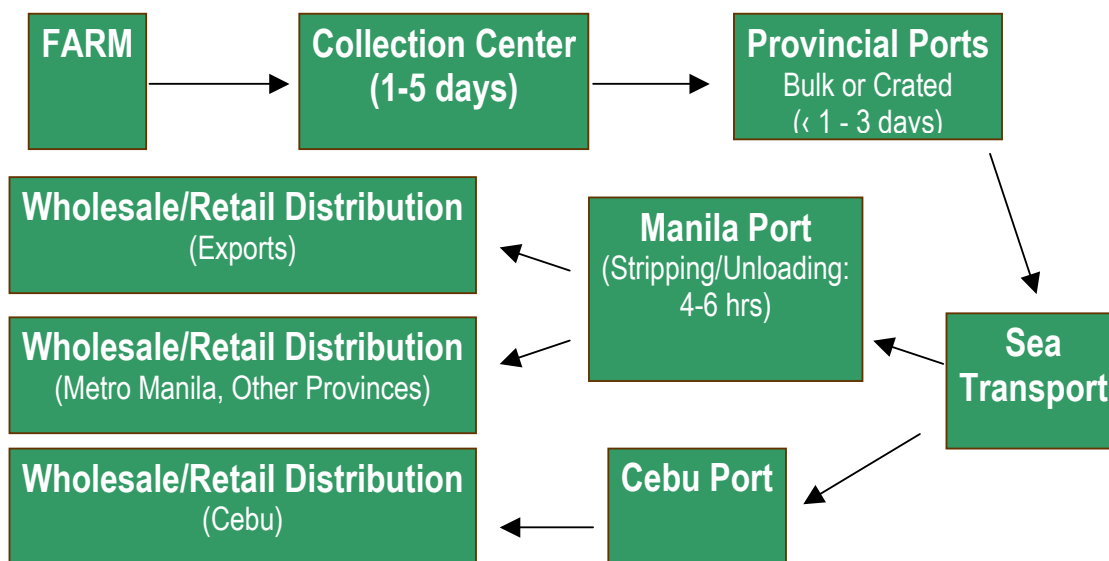
<sup>12</sup> Ibid.

<sup>13</sup> Japan: Country Report: Food and Agricultural Import Regulations and Standards. GAIN Report, Foreign Agricultural Service, USDA. August 2003.

directly employs more than 45,000 people in farms of the Cavendish variety alone<sup>14</sup>. Major export markets of Philippine bananas are enumerated below:

<b>Market</b>	<b>Percentage</b>	<b>USD equivalent</b>
Japan	54%	152.67m
People's Republic of China	11%	31.43m
United Arab Emirates	11%	30.54m
Republic of Taiwan	10%	27.02m
Republic of South Korea	9%	24.45m

The following is an illustration of the geographical flow of Philippine bananas:



Several specific strategies for bananas have been established by the Department of Agriculture (DA) in order to be able to achieve key objectives such as increased productivity, reduced post-harvest losses, and greater market access, both domestically and internationally<sup>15</sup>. These were directly from the Banana Road Map as prepared by the DA:

1. First frying operations for banana *saba*
2. Intensified international promotions for cereal uses of banana chips in Europe, Middle East, North America and China.
3. Prepare site suitability map (e.g., classify areas with even or longer rainy season, typhoon-free and loamy soil)
4. Intensify production of tissue culture plants thru establishment of tissue culture laboratories in strategic areas and micro propagation technology transfer
5. Kits for indexing viral diseases
6. Increase access to irrigation facilities, and fertilizer inputs and recommendations

<sup>14</sup> Banana Road Map. Department of Agriculture (DA), Republic of the Philippines. 2003.

<sup>15</sup> Ibid.

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7. Conduct integrated OR & D focusing on varietal improvement, planting density, cropping systems, irrigation and fertilization
  8. Reduce losses by massive info drive on the proper handling and PH technologies of banana
  9. Improve the handling chain (e.g., use of appropriate containers, refrigerated trucks/vans, method of handling)
  10. Harmonize existing standards with CODEX
  11. Promote adoption of harvesting techniques for small - and medium - scale banana growers (e.g., use of cushion pads, de-handling tools, etc.)
  12. Develop tramlines in mountainous productive areas (e.g., Mindoro, Agusan Provinces, etc.)
  13. Tap new foreign markets for banana chips such as China and Iran.
  14. Market information from attaches
  15. Conduct rapid marketing appraisal studies (domestic and selected target markets abroad)
  16. Participation of industry players in market promotion activities (e.g., trade missions/fairs, exhibitions/festivals)
  17. Tariff reduction / market access (Australia / US / Taiwan)

#### **Awareness on the Issues and Effectiveness of Information Management**

Philippine experience with regard to conformance with required environmental management systems (EMS) is very evident in ISO certification<sup>16</sup>. Though it is already understood that this is non-mandatory, ISO has actually become a prerequisite to necessitate the “greening” of the supply chain. Since creating a facility for ISO certification or other EMS is expensive, very few companies until 1999, more so with small- to medium-sized enterprises (SME), adopted them. Furthermore during that time, there was an apparent lack of awareness of the benefits of EMS and cleaner production and of the environmental laws themselves<sup>17</sup>. Fortunately in the present time, I can conclude that there have been significant improvements in this area. The Philippines generated some USD 400 million in banana export earnings in 2003, and the country now stands at becoming the second largest banana exporter in the world, edging out Costa Rica<sup>18</sup>. Aside from increased demand in key markets, this powerful surge is attributable to the constant benchmarking of industry participants to attain international standards.

In the realm of EUREPGAP, independent groups advise local producers on production and the adoption of management systems. In 2003, Agro Eco, which is an Dutch, independent, and private consultancy company specializing in organic agriculture, advised a large group of small holders and processors in the Philippines on the organic production of bananas and coconuts. This was conducted to help fulfill new regulations by implementing an internal control system, so as to address the issue of the composting and recycling of waste from the factories of banana chips and coconut oil<sup>19</sup>. The

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<sup>16</sup> Kaushik, Atul. “The Impact of Environmental Requirements on Export Performance. Strengthening Research and Policy-Making Capacity on Trade and Environment in Developing Countries.” Los Baños, Philippines: November 1999.

<sup>17</sup> Ibid.

<sup>18</sup> Gaylican, Christine. “RP seen to overtake 2<sup>nd</sup> lead Costa Rica in banana exports.” Business, Philippine Daily Inquirer. Manila, Philippines: 21 June 2004.

<sup>19</sup> Annual Report. Agro Eco. 2003.

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International Trade Centre, jointly governed by the UNCTAD and WTO, has strengthened efforts in increasing awareness on marketing entry requirements, particularly to those for the European market. Projects have been implemented whereby tours were organized to acquaint producers and exporters with market trends and an understanding of quality and standards requirements for imports in the EU, in respect of EUREPGAP<sup>20</sup>.

#### *HORTINET*

The **Department of Science and Technology (DOST)** has extended governmental efforts onto cyberspace with the **Horticulture Information Network (HORTINET)**<sup>21</sup>, which is a one-stop information site to assist participants in the horticultural markets. Here, visitors have unrestricted access to critical information: comprehensive commodity profiles, market information, latest research and development (R&D), and directories with contact information of industry experts.

Taking vertical integration of policies and pro-active measures into the discussion, several efforts are being undertaken to disseminate information on environmental requirements for international trade. There are already several widely known international (global and regional) resources that clearly and comprehensively share information on environmental standards. Examples of these are AccessGuide (CBI The Netherlands), TRAINS from the UNCTAD, Market Access from the EU, and many others<sup>22</sup>. These resources can be accessed primarily through the print media and cyberspace. In the Philippines, there is a coordinated effort among sister-agencies or horizontally integrated groups within the Department of Agriculture (DA) that make pertinent data from these resources accessible to domestic participants of the horticultural markets. It is partly in this regard that the **Bureau of Plant Industries (BPI)** was created. The BPI enacts policies to implement and encourage compliance with **Good Agricultural Practice (GAP)**, which mainly sets limits on pesticide residues on food products. These limits are calculated by the **National Pesticide Analytical Lab (NPAL)**, a constituent of the BPI. The BPI aligns its resources and standards with those of the Codex Alimentarius<sup>23</sup>, which is a joint venture between the **Food and Agricultural Organization (FAO)** and the **World Health Organization (WHO)**. Under Philippine Executive Order 1016, all plant products which include fruits and vegetables capable of harboring pests and insect specimens need export clearance from the BPI through the issuance of a Phytosanitary Certificate<sup>24</sup>. This alignment of standards smoothens the conformance and compliance of domestic horticultural producers with these international standards.

Taken directly from Codex Alimentarius, “The Codex Alimentarius Commission was created in 1963 by FAO and WHO to develop food standards, guidelines and related texts such as codes of practice under the Joint FAO/WHO Food Standards Programme. The main purposes of this Programme are protecting health of the consumers and ensuring fair trade practices in the food trade, and promoting coordination of all food standards

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<sup>20</sup> Annual Report. International Trade Centre. 2002

<sup>21</sup> [www.hortinet.pcarrd.dost.gov.ph](http://www.hortinet.pcarrd.dost.gov.ph)

<sup>22</sup> “Feasibility Study on a Clearinghouse on Environmental and Health Requirements and International Trade

<sup>23</sup> Bureau of Plant Industries (BPI), Department of Agriculture (DA), Republic of the Philippines. August 2004.

<sup>24</sup> Ibid.

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work undertaken by international governmental and non-governmental organizations<sup>25</sup>. The Philippine uses the Codex as the benchmark for national and international standards<sup>26</sup>. The Codex implements and enforces specific, coded standards that affect:

- Vegetable protein products
- Vegetable juices
- Named vegetable oils
- Canned fruit and vegetable
- Dehydrated fruits and vegetables including edible fungi
- Packaging the transport of tropical fresh fruit and vegetables
- Utilization of vegetable protein products in foods
- Fruit preserves: jams and jellies
- Fruit nectars preserved
- Fruit juices preserved
- Dried Fruit

The SPS (Sanitary and Phytosanitary) and TBT (Technical Barriers to Trade) Agreements have awarded special status to the standards from Codex as official reference points in determining food standards. And likewise due to the strict requirements on sanitation, safety, and consequently fierce competition in the foreign markets, fruit exporters are assisted and are given advice to comply with good practices and Hazard Analysis Critical Point (HACCP).

### **Current Adjustment Approach**

The Philippine government, which is presently headed by the Macapagal-Arroyo Administration, has been striving to be proactive in developing the agricultural sector. President Gloria Macapagal-Arroyo has established a mandate under her leadership to improve farm productivity. To achieve this, she sought the expertise of Luis P. Lorenzo, first appointed as Labor Secretary then successively as Secretary for the **Department of Agriculture (DA)**. Note here that job growth has been a concurrent objective of Macapagal's administration alongside agriculture modernization.

More specifically, Republic Act 8435 or the **Agricultural and Fisheries Modernization Act (AFMA)** was implemented. This law was further strengthened soon after in 2004 with RA 9281, which extends duty-free privileges to producers under AFMA who import agricultural inputs and equipment. This enhancement also gave assurance of uninterrupted funding assistance until year 2015.

The AFMA is actually a blueprint for the agricultural sector's modernization and rural development<sup>27</sup>. "It defines the need to transform the rural environment into one that is more integrated into national and international markets<sup>28</sup>." Absolutely key in the realization of the objectives of the AFMA are the **Key Commodity Roadmaps** (onwards referred to as Roadmap/s), which chart the DA's course of action for each major commodity: firstly in horticulture—vegetables, coconut, mango, banana, papaya, durian, and calamansi; others include rice, corn, livestock, fisheries, and coffee<sup>29</sup>.

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<sup>25</sup> www.codexalimentarius.net

<sup>26</sup> Supply and Demand Survey Report on Agro-Products & Processed Foods. Department of Trade and Industry (DTI). Republic of the Philippines. November 2001.

<sup>27</sup> Department of Agriculture. "Philippine Agriculture: Breaking the boom-and-bust cycle." Business, Philippine Daily Inquirer. Manila: 28 July 2004.

<sup>28</sup> Ibid.

<sup>29</sup> Ibid.

A common denominator among all the Roadmaps is the outline of three major objectives to achieve industry growth. First, post harvest losses have to be significantly and ultimately reduced. Second, improved prices should be valued from assured product quality. Third, product exports should be enhanced<sup>30</sup>. Each roadmap takes each respective commodity into analysis. It substantially presents updated and relevant information on current conditions such as: supply and demand assessment, prices, geographical flows, and marketing channels. From these analyses, the Roadmap resolves to recommend and/or implement a bundle of key strategies.

Certainly a major component of the AFMA is the tackling of the accessibility of credit, particularly toward the countryside and rural areas. Though the Land Bank of the Philippines was long-since established in 1963 as an institution to specifically render this kind of financial service, **Quedan and Rural Credit and Guarantee Corporation (Quedancor)** has been spearheading such efforts. Quedancor has bolstered lending and organizing activities, and it has more definitively ensured the continuous flow of affordable credit.

It is also worth mentioning that the country recognizes that it currently exports organic products, such as muscovado sugar, fresh bananas, coconut oil and chips<sup>31</sup>. By definition, organic refers to products whereby their farming takes the following into account:

- Minimum reliance on artificial inputs
- Feeding of the soil and not the plant
- Food safety practices (GMP, HACCP, non-use of hazardous chemicals from farm, to distribution, to marketing)
- Certification of the entire production/distribution chain, and not the end product
- Non-use of genetically-modified organisms (GMO's)

It has been observed that the Philippine market enjoys several advantages:

- Low labor cost among rural households
- Proximity to major markets
- Year-round tropical climate makes organic agriculture suitable
- Rich biodiversity
- Trainable workforce (farmers, farm technicians, agriculture extension workers, processors)
- There are exporters willing to invest and convert into organic since premium price (20-30% higher than conventional products)

The table below illustrates key players in the Philippine market for organic produce:

### Key Players

Companies	Products
<b>Organic/Natural Foods</b>	
Celebes Agricultural Corporation	certified organic coconut oil, coco chips, banana chips
Basic Fruits Worldwide Corp.	certified organic banana chips
Marsman Dysdale Organic Farms Inc.	organic fresh bananas (not yet cert)

<sup>30</sup> 2<sup>nd</sup> Publication of the Key Commodity Roadmaps. Department of Agriculture. April 2003.

<sup>31</sup> Ibid.

Tri-Star Group/JVA Group	green Cavendish bananas
Lapanday Agri. Corp.	green Cavendish bananas
Twin Rivers/Hijo Plantation	green Cavendish bananas
Alter Trade Corporation	certified organic muscovado sugar, fresh organic Bongalon bananas
<b>Herbals</b>	
Use-Techno Corporation	herbal teas (not org. cert.)
Altermed Corporation	herbal teas (not org. cert.)
International Pharmaceuticals Inc.	herbal teas (not org. cert.)

The subsequent table displays the current level of exports:

### Current Level of Exports

Cert. Org. Products	Quantity	Value (US\$)
coconut oil (crude)	111.34 mt	50,103
coconut chips	2,200 ctns	17,160
banana chips	104,150 kgs	35,102
fresh banana		1,001,178
muscovado sugar		242,342

There have also been instances of public-private partnership of groups from several countries to enhance vegetable production. For example, a project funded by the INCO-DC program of the European Commission has been jointly executed by institutions from the following<sup>32</sup>:

- Lehrstuhl für Gemüsebau, Technische Universität München-Weihenstephan (TUM), Freising, Germany (project coordination, plant nutrition and water management)
- Center for International Cooperation in Agronomic Research (CIRAD), Montpellier, France (crop protection)
- Xavier University, College of Agriculture, Cagayan de Oro, Philippines (socioeconomic surveys, plant nutrition)
- Bukidnon Seed Corporation (BUSECORP), Manolo Fortich, Bukidnon, Philippines (crop improvement)
- Institute for Agricultural Science of South Vietnam, Ho Chi Minh City, Vietnam (crop protection)
- Hat Dokkeo Agricultural Station (HDK), Vientiane, Laos (water management)

Through analysis of the economic, sociological, and anthropological situation, this project aims to evaluate and prioritize the potential for vegetable production. The various research institutes noted above will cooperate to introduce production technologies that address this primary objective, while simultaneously being compatible with the socio-economic and anthropological situation in the respective communities. In particular, the project plans to introduce the following technologies<sup>33</sup>:

<sup>32</sup> Holmer, Dr. Robert J.. Urban and Periurban Small and Medium-Sized Enterprise Development for Sustainable Vegetable Production and Marketing Systems

<sup>33</sup> Ibid.

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- Production of organic fertilizer from city waste and its application on vegetable cultivars,
  - Suitable plant protection methods using beneficial organisms, bio-pesticides, and aromatic plants as insect repellants,
  - Appropriate water management technologies for dry and rainy season, particularly use of drip irrigation and high bed systems.
  - A private Philippine plant breeding company will contribute seeds of the following crops which are adapted to the climate of the tropical lowland and have resistance or tolerance to the prevalent diseases:
    - Tomato (*Lycopersicon esculentum*), sweet pepper (*Capsicum annum*), eggplant (*Solanum melongena*), bush bean (*Vigna sesquipedalis*), cowpea (*Vigna unguiculata*), vegetable soybean (*Glycine max*), head cabbage (*Brassica oleracea* var. *capitata*), cauliflower (*Bassica oleracea* var. *botrytis*), and papaya (*Carica papaya*).
  - These vegetable cultivars will be evaluated at the different project sites. Seed collection and breeding will be done to further increase the quality of the plant germplasm.

Subsequently, the expected result of the project is to facilitate SMEs with market access by developing socially, economically, and ecologically sustainable vegetable production systems. Further, the project will contribute to:

- Strengthening the social and economic livelihood situation of small urban and periurban vegetable growers and their families,
- Improving the management, structures and functioning of urban agro-ecosystems by reduced soil erosion, maintenance of soil fertility, limited pollution of soil and water and increased water use efficiency. In combination with the availability of appropriate plant material this will result in a better and more sustainable utilization of urban and periurban agricultural production resources.
- Increasing and ensuring the year-round supply of clean and affordable vegetables rich in vitamins and micronutrients for the urban population,
- Improving the quantity and quality of raw material for the local food processing industry,
- Availing baseline data for consideration of (peri-)urban vegetable production in local, national and international government policy programs and on the curriculum of the academe,
- Creating or increasing markets for local small and medium-sized entrepreneurs producing organic fertilizers and/or rearing beneficial insects,
- Promoting household garbage segregation in urban areas of developing countries. This can stimulate SME development for junk dealers (glass, paper, metal) and provide them a healthier working environment than presently done by sorting out junk from urban dumping areas.

In comparison, large multinationals such as Dole Philippines, Del Monte Philippines, and California Manufacturing Corporation employ the operational capabilities of whole plants and factories for the processing of fruits. Medium scale enterprises utilize semi-mechanized equipment, though gearing towards full automation, while taking advantage of the country's large pool of skilled labor. The production capabilities used by small-sized enterprises are similar to an expanded kitchen, where processes are largely manually driven and employ low technology. As this comparison would imply weak leverage for the smaller producers, the Food Development Center (FDC) under the Department of Agriculture (DA), is a government-owned corporation which provides

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technical advice, services, technologies, and training to food exporters to assist in compliance with international requirements<sup>34</sup>. The investment to establish this company was donated by the Japanese government in 1989. The following details the services of the FDC to the food industry as a whole:

- Food testing and evaluation of the quality of food products for specific markets;
  - The FDC conducts the various tests required by the international market for food products. This includes chemical, microbiological, micro-analytical (micro-filth), physical and sensory testing, package testing (cans, bottles and flexible packages), shelf-life testing, label evaluation, process establishment (Fo) and tests for heat distribution in retorts.
- Product development and pilot production of products for market testing;
  - This involves development of products in laboratory and pilot scale to establish technical and market feasibility.
- Plant and process inspection, provision of quality assurance services and shipment certification;
  - This involves inspection of plants to determine compliance with international standards for good manufacturing practices and certification by lot, of products produced under agreed quality control procedures.
- Training on food testing, plant inspections, Good Manufacturing Practices (GMP) and Hazard Analysis Critical Control Point (HACCP);
  - FDC conducts training courses for industries in general or for specific companies in areas related to food testing, processing and quality control.
- R&D on industry related problems and on the development of needed technologies;
  - This involves short term studies on specific industry problems as causes of product spoilage and development of food testing methods.

### **Elements of a Pro-active Approach and the Need for Institutional Capacity Building**

When it comes to designing an effective approach and evaluating institutional capacity building for compliance or conformance with international environmental and health standards, I propose the need to effectively execute coordinated vertical and horizontal integration of policies and action-taking, in national, regional, and international scopes. This resolution is presented in a broad perspective, and as with any, certainly operates on a number of assumptions if it is to be effectual, useful, and beneficial.

Firstly, one of paramount importance<sup>35</sup> is the availability and transparency of information. Certainly, institutional efforts from the UN and other regional—private and/or public—associations should continue to strengthen and further the development and creation of valuable knowledge. This should be fundamentally achieved as substance should always precede any measure of disseminating information. Going forward, as we can already observe in various forms of media, creative and innovative means of paving access to information should be formed. For example, with such rich information resources in the form of websites and other online databases, innovation should provide accessibility and ease of use to even the marginally sophisticated participants of relevant

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<sup>34</sup> Ibid.

<sup>35</sup> Ibid.

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markets. Moving horizontally on this level, concerned parties in this development should collectively adhere to practices of transparency of information. Progress on this front can already be seen from higher institutions like the WTO, which issues timely publications that outline procedures for transparency. To illustrate, the Sanitary and Phytosanitary Agreement (SPS) of the WTO obligates member-states to notify the organization of changes in their SPS measures. Moreover, substantial information should be provided to support such amendments, so as to ensure viability and that these were effected through scientific experiment and rational basis<sup>36</sup>.

Let us move vertically downward, onto the national level. Here, concerted endeavors that power the stream of information between policy-makers and producers are extremely important. It becomes apparent that the bodies in the most tactical position to put such capabilities into effect are the government and its affiliated agencies. In the present case of the Philippines, the AFMA of the DA, I should conclude, is certainly in the right direction. However, upon deeper examination, we can see that the objectives this programme intends to accomplish are still too broad. This is perhaps the natural circumstance for a nation still considered to be developing. But such a classification, I firmly believe, should not serve as an impediment toward designing customized and specialized solutions aimed at enhancing the competitiveness of traded goods. In fact, international requirements themselves, such as environmental and/or health legislation, should actually be the impetus for conformance. Compliance with these environmental laws enhances exports, therefore giving leverage to producers and the nation's trade balance. More focus should be drawn on these programmes that more accurately aim for alignment with international standards.

Finally, on the level of the producers and other participants from the supply-side of the market, awareness should be alleviated. Up until a few years ago, many producers were reluctant to match international environment requirements because, aside from additional investment that compliance would entail, they simply weren't knowledgeable of the potential benefits or at times even of the laws themselves<sup>37</sup>. And it certainly should be known that particular attention should be given to small- to medium-sized enterprises (SME). Horizontally at this level, an effective strategy comes in the form of industry alliances and organizations. In the Philippines for example, organizations have been created for various commodity types, which create a collaborative capacity for cooperation. These associations can help realize internal and external benefits from environmental compliance, such as improved market share, ideally with increased exports, and improved financial conditions, generated by improved cost-efficiency, continuous access to capital<sup>38</sup>, and reduced insurance premiums<sup>39</sup>. ►

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<sup>36</sup> "Dimensions of Transparency In Pre-Standard Setting Policy and Practise—A Study of Public and Private Sector Consultative Practice. UNCTAD, INMETRO. Brazil: June 2004.

<sup>37</sup> Ibid.

<sup>38</sup> Ibid.

<sup>39</sup> Morella, Grace. "Environmental Management Systems: What's in it for Business?." *Voice of Business*. Philippines Chamber of Commerce and Industry (PCCI). Manila, Philippines: June 2004.