

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 UNCTAD

By Alex F Favila
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Objectives of the Study

- Present the Philippine horticulture industry
- Identify applicable environmental standards and requirements that relate to quality, safety, and health, as implemented and enforced by international export markets
- Elaborate on the awareness of these standards and thereby analyze the effectiveness of information management
- Evaluate of these standards have been adjusted to and have a meaningful assessment of the effects
- Make recommendations for progressive activity and address any need for capacity building on an institutional level

The Philippine Horticulture Industry

USD Value (FOB)

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

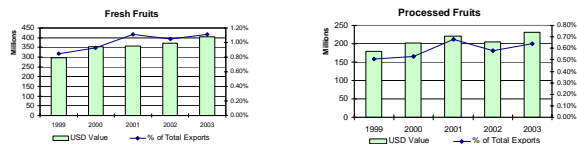
As a Percentage of Total Philippine Exports

% 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%

Year-on-Year (YoY) Growth

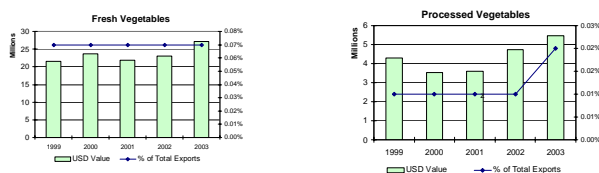
Growth Rate YoY	2000	2001	2002	2003	AVE
Processed Fruits	12.46%	9.19%	-6.34%	12.39%	6.93%
Processed Vegetables	-17.54%	1.12%	32.39%	15.01%	7.74%
Fresh Fruits	19.05%	0.87%	3.90%	8.77%	8.15%
Fresh Vegetables	9.95%	-7.41%	5.49%	17.47%	6.38%
Cutflowers/Ornamental Plants	-6.87%	-2.82%	61.70%	-20.89%	7.78%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

Fruits



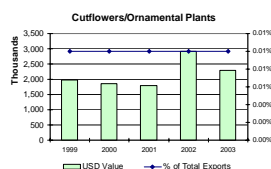
- processed and fresh fruits combined constitute a majority of horticultural exports, accounting for 94% of total horticulture exports on average for the period under analysis
- Total fruit exports has also been growing at an average rate of 15.07% in the same time period.

Vegetables



- Exports of processed and fresh vegetables together has stayed around 5% as a percentage of total horticultural exports
- 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%.

Cutflowers and Ornamental Plants



- 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.

International Environmental Standards

European Union

- Types of Policies
 - Environmental Legislation
 - Mandatory for both trading with and within borders of the EU
 - Environmental Standards
 - Take entire process into consideration
 - Environmental Labels
 - Non-compulsory
 - Voluntary because seen as response to market incentives rather than to public regulations
 - Development has shown that this has become a requirement in some parts
 - Environmental Management Systems (EMS)
 - Non-compulsory
 - Ecodesign
 - Environmentally sound product design
 - Entire life cycle of the product is taken into account, not just the production chain
- Consumer health and safety issues are taken parallel to these environmental policies

EUREPGAP

- Euro-Retailer Produce Working Group – Good Agricultural Practice
- Established in 1999 by leading European retailers to address concerns of its members and certainly those of its consumers
- Key objective: develop a framework for sound agricultural practice based on international standards, the implement and enforce this to increase food safety.
- Advantages:
 - Compliant producers will adopt production processes and management systems that are aligned with international standards
 - Traceability of the product from consumer to field is ensured
 - Certification is conducted and provided by an independent third party.

United States

- Department of Agriculture
 - **Agricultural Marketing Service (AMS)**
 - (1) facilitating the marketing of agricultural produce
 - (2) certifying quality in the food supply for consumers, (independent/federal/official grading service)
 - (3) implementing fair trading practices, inclusive of enforcement.
 - **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.
 - 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.

United States

- **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)**
 - the US Government's environmental representative in matters dealing with the safety of foods.
 - 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

- **Ministry of Health, Labor, and Welfare (MHLW).**
 - Set general import requirements and standards relating to environmental, health, and safety concerns
 - Imported foods that do not meet the requirements implemented by this agency will **not be allowed** entry.
- **Ministry of Agriculture, Forestry and Fisheries (MAFF)**
 - involved in food risk management, focusing on the area of food labeling, through the **Japan Agricultural standards (JAS) Law**.
 - plant (and animal) health protection, through a series of quarantine laws.

Japan

- **Japan Agricultural Standards Law**
 - Revised in 2000
 - Requires labeling of:
 - Place of origin for all perishable foods (produce, meat, seafood, dairy)
 - 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%.
 - Organic labeling, including mandatory third-party certification for products labeled as “organic.”

Philippine Bananas

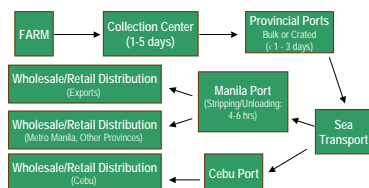
Commodity Case Study

Snapshot

- Bananas a major industry in the Philippines.
- This commodity alone accounts for 0.4% of total GDP in 2001 statistics.
- Generates export earnings of more than USD 250m annually.
- This industry also directly employs more than 45,000 people in farms of the Cavendish variety alone.
- Major export markets:

<u>Market</u>	<u>Percentage</u>	<u>USD equivalent</u>
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

Geographical Flow



Commodity Road Map

- 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.
- These were directly from the Banana Road Map as prepared by the DA:
 - First frying operations for banana saba
 - Intensified international promotions for cereal uses of banana chips in Europe, Middle East, North America and China.
 - Prepare site suitability map (e.g., classify areas with even or longer rainy season, typhoon-free and loamy soil)
 - Intensity production of tissue culture plants thru establishment of tissue culture laboratories in strategic areas and micro propagation technology transfer
 - Kits for indexing viral diseases
 - Increase access to irrigation facilities, and fertilizer inputs and recommendations
 - Conduct integrated OR & D focusing on varietal improvement, planting density, cropping systems, irrigation and fertilization
 - Reduce losses by massive info drive on the proper handling and PH technologies of banana
 - Improve the handling chain (e.g., use of appropriate containers, refrigerated trucks/vans, method of handling)

Commodity Road Map

- Continuation
 - [Harmonize existing standards with CODEX](#)
 - Promote adoption of harvesting techniques for small - and medium - scale banana growers (e.g., use of cushion pads, de-handling tools, etc.)
 - Develop tramlines in mountainous productive areas (e.g., Mindoro, Agusan Provinces, etc.)
 - Tap new foreign markets for banana chips such as China and Iran.
 - Market information from attaches
 - Conduct rapid marketing appraisal studies (domestic and selected target markets abroad)
 - Participation of industry players in market promotion activities (e.g., trade missions/fairs, exhibitions/festivals)
 - Tariff reduction / market access (Australia / US / Taiwan)
- 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. Aside from increased demand in key markets, this powerful surge is attributable to the constant benchmarking of industry participants to attain international standards

Awareness on the Issues and Effectiveness of Information Management

Environmental Management Systems (EMS)

- ISO
 - very few companies until 1999, more so with small- to medium-sized enterprises (SME), adopted them.
 - there is an apparent lack of awareness of the benefits of EMS and cleaner production and of the environmental laws themselves.
- HORTINET
 - The Department of Science and Technology (DOST) has extended governmental efforts onto cyberspace with the Horticulture Information Network (HORTINET), which is a one-stop information site to assist participants in the horticultural markets.
 - 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.

EMS

- EUREPGAP
 - independent groups advise local producers on production and the adoption of management systems.
 - Agro Eco
 - 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.
 - International Trade Centre (UNCTAD/WHO)
 - 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.

National Enquiry Point

- Phil. Department of Agriculture (DA)
 - 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, 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.
 - 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).

International Standards

- The Codex Alimentarius Commission
 - 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 work undertaken by international governmental and non-governmental organizations.
 - The Philippines uses the Codex as the benchmark for national and international standards. 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

Current Adjustment Approach

Government

- Arroyo Administration
 - DA: Agricultural and Fisheries Modernization Act (AFMA)
 - The AFMA is actually a blueprint for the agricultural sector's modernization and rural development.
 - "It defines the need to transform the rural environment into one that is more integrated into national and international markets."
 - Absolutely key in the realization of the objectives of the AFMA are the Key Commodity Roadmaps which chart the DA's course of action for each major commodity:
 - horticulture—vegetables, coconut, mango, banana, papaya, durian, and calamansi
 - Roadmaps
 - post harvest losses have to be significantly and ultimately reduced.
 - improved prices should be valued from assured product quality.
 - Third, product exports should be enhanced
 - Finance
 - Land Bank of the Philippines
 - Quedan and Rural Credit and Guarantee Corporation (Quedancor)

Organic Produce

Key Players

Companies	Products
Organic/Natural Foods	
Celebes Agricultural Corporation	certified organic coconut oil, coon chips, banana chips
Banc Fruit Worldwide Corp.	certified organic banana chips
Mananan Organic Farms Inc.	organic fresh bananas (not yet cert)
En-Sun Group P.A. Group	green Cavendish bananas
Lapaday Agri. Corp.	green Cavendish bananas
Fein Rivers-Hilo Plantation	green Cavendish bananas
Aler Trade Corporation	certified organic muscovado sugar, fresh organic Bengawan bananas
Herbals	
Uzo-Techno Corporation	herbal teas (not org. cert)
Shoring Corporation	herbal teas (not org. cert)
International Pharmaceuticals Inc.	herbal teas (not org. cert)

Current Level of Exports

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

Private-Public Partnership

- 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:
 - 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)
- In particular, the project plans to introduce the following technologies:
 - 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 (*Brassica 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.

Private-Public Partnership

- Expected Results:
 - 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.

SMEs

- Comparison
 - 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.
- Food Development Center (FDC) under the Department of Agriculture (DA),
 - is a government-owned corporation which provides technical advice, services, technologies, and training to food exporters to assist in compliance with international requirements .
 - 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;
 - Product development and pilot production of products for market testing
 - Plant and process inspection, provision of quality assurance services and shipment certification;
 - Training on food testing, plant inspections, Good Manufacturing Practices (GMP) and Hazard Analysis Critical Control Point (HACCP);
 - R&D on industry related problems and on the development of needed technologies;

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

- ### Recommendations
- Coordinated vertical and horizontal integration of policies and action-taking, in national, regional, and international scopes.
 - Transparency of information.
 - Concerted efforts that power the stream of information between policy-makers and producers
 - On the level of the producers and other participants from the supply-side of the market, awareness should be alleviated.