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Exports from Developing Countries and Food Safety Concerns

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Food safety issues are becoming more important in international trade. Fresh food products are more likely to carry food risks and to encounter Sanitary and Phytosanitary Measures (SPS) as barriers to market access. Developing countries (DC) need to overcome barriers and develop capability to guarantee the safety of food product exports in order to maximize benefits from international trade. The paper examines the importance of agro-food processing sector for developing countries and explores the private and public actions required to address food safety risks in fresh food product exports from developing countries.

Thus DC exporters must learn to supply safe products and to defend their interest in transparent, science-based standards. Successful export market development will also require public actions by DC governments. Such actions may include research to improve production methods, testing and certification of product, implementation of new regulation, negotiating pre-certification by importer governments, and participation in international negotiations regarding SPS measures.

Introduction

Industrial processing of food, beverages, and tobacco typically employs around 20 to 30 percent of labor force in developing countries. Expressed as a ratio to agricultural GDP, value-added in food, beverages and tobacco provide a broad indicator of the relative importance of agro-food processing compared to primary agriculture. Processing has been an important component of overall agro-food production in Latin America and the Caribbean. In Sub-Saharan Africa as well as other developing countries, processing of food has gained importance relative to primary agricultural production.

Fresh food markets provide significant opportunities for developing countries (DC) to develop agricultural exports. Also, fresh food products have high-income elasticities of demand in high-income markets and face fewer traditional protectionist barriers. However, these products are also more likely to carry food safety risks and to encounter (SPS) measures as barriers to market access.

Food Safety issues has also become a major concern for consumers. Extensive media attention and growing general awareness of the relationship between diet health have heightened these concerns (Hooker, Nayga, and Siebert, 1999). Therefore, developing countries need to overcome barriers and

develop capability to guarantee the safety of food product exports in order to fully utilize gains from trade. However, future growth in exports or the capture of new markets by low-income countries will take place within a changing context for quality control in developed countries. Consumers in developed countries have become more aware of food safety risks and demand guarantee regarding product handling. At the same time many DCs are modifying their food safety regulations to emphasize process control and prevention of risks throughout the production process. Taken together, these trends mean that meeting food safety standards is a challenge but an important prerequisite for enhancing food product exports. Developing countries exporters thus must learn to supply safe products and to defend their interests in transparent science-based standards.

Objective

The paper examines the importance of agro-food processing sector for developing countries and explores the private and public actions required to address food safety risks in fresh food product exports from developing countries. The paper also focuses on international trade issues from developing countries and their relationships with food safety issues.

Importance of Fresh Product Exports from Developing Countries

The structure of international trade in agricultural products for DCs has significantly changed

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over the last decades, especially on the export side. Table 1 shows the composition of agricultural exports (from DCs) since the 1960s, in current values. Exports of sugar, coffee, and cocoa (and related products) represented about one third of all agricultural exports by DCs in 1960s dropped to about one fourth of all agricultural products during the nineties. On the other hand, share of fruits and vegetables and related products, more than doubled during the same period.

Fresh food products, which include exports of fresh meat, seafood, vegetables, and fruits, account for a half of the value of total food and agricultural exports from all DCs. Trade in these products has been expanding rapidly in high income markets, and fresh product share of agricultural trade has increased in many developing countries and regions (Table 2).

- East Asia (EA) has the largest total value of fresh food exports among the regions. Meat, fish and vegetables are important. Japan is the largest importer, North America significant but much smaller market.
- The Latin America/Caribbean is the second largest exporter of all fresh food, with fruit being the largest. North America is the biggest market for all countries.
- North Africa/Middle East (NA/ME) exports primarily fruits, fish and vegetables. EU is the principal market.
- Sub-Saharan Africa exports fish and fruits to EU.
- South Asia exports are primarily fish, with increase in meat and vegetables.

Certain patterns are clear from the regional data presented in Table 2. Relatively developed regions have a greater volume of exports. The Latin American Countries (LAC) and East Asia (EA) regions are major participants in world food markets and have well developed market channels. They have much greater product and export market diversification than the other regions. The regions with the greatest number of low-income countries Sub-Saharan Africa (SSA) and South Asia, have exporters that are more concentrated in particular products. Fish and seafood are particularly important for low-income countries. In Africa and NA/ME, exports are concentrated in one market, the EU; South Asia has some diversity in export markets.

About 50 percent of all imports of agricultural products in the U.S. from developing countries in 1999. The total imports from developing countries increased by 14.74 percent during 1995-99. During this time period, major increase in U.S. imports from developing countries were snack food (79.15 %), fresh fruits (78.74 %), and red meat (30.40 %). The overall imports of consumer oriented agricultural products increased by 38.37 percent (FAS/USDA, 2000).

These patterns suggest the kind of issues that will be important for export market development and for food safety issues in trade. The trends also indicate that export market development and diversification are important for low-income countries. Where as continued export market access will be more important for the middle income regions. Exporters in all regions need to know how to meet standards in different markets and how to meet the increasing demand for certification of production methods.

Table 1. Change in Structure of Exports by Major Agricultural Products from Developing Countries, 1960-97.

Products	1960-65	1965-70	1990-95	1995-97
Meat and Products	3.4	4.5	4.6	4.5
Cereals and Products	8.6	8.4	7.9	8.9
Fruit & Vegetables and Products	8.9	10.9	20.2	17.8
Sugar and Products ^a	10.6	9.8	7.1	6.9
Coffee, Cocoa, and Products ^b	23.8	25.3	15.1	16.1
Tobacco	3.3	2.8	6.9	7.0
Oilseeds and Products	10.4	9.6	16.4	17.7
Textile Fibers	15.2	13.8	3.9	3.6
Natural Rubber	7.6	6.2	4.7	4.7
Other	8.3	8.7	13.2	12.9
TOTAL	100	100	100	100

^aIncluding Honey

^bIncluding Tea and Spices

Table 2. Fresh Food Exports from Developing Regions to Developed Economies (Value in \$1000).

Product	South Asia		East Asia		Sub-Saharan Africa		Mid. East/ North America		Latin America	
	1993	1996	1993	1996	1993	1996	1993	1996	1993	1996
Total Fresh (million)	1,331	1,532	10,109	11,655	188	341	1,869	2,439	8,878	11,383
Total Agriculture (million)	2,094	2,562	18,494	22,267	1,361	1,835	3,243	4,158	20,208	26,941
Fresh % of Ag	63.58	59.83	54.66	52.34	13.86	18.62	57.64	58.66	43.94	42.25
Ag % of Total	10.18	9.61	6.90	5.90	20.11	23.73	8.75	8.88	18.76	16.15

Source: United Nations (1996).

Food Safety Issues for Fresh Food Product Exports from Developing Countries

Time and again potential exporters and importers have regarded "health and phytosanitary" issues and regulations and other trade impediments as barriers to free trade. Food safety issues are more likely to be a concern in fresh food product trade than in other kinds of agricultural product trade because:

- fresh products are shipped and consumed in fresh form, handling at all points of the food chain can influence food safety and quality;
- manufactured and processed food products may not deteriorate during shipping and handling, however, fresh products are more likely to deteriorate;
- there is a lack of quality control and sanitation and good manufacturing practices in DCs; and
- there is increased consumer awareness about food safety hazards in developed countries.

Kinds of Food Safety Hazards

Table 4 shows kinds of food safety hazards that can occur in fresh food products. These safety hazards vary by type of food. Food and Agriculture Organization (FAO) 1999 and the United Nations, summarized the U.S., FDA data by reason for detention and region of the world for 1996/97 and determined that most detentions were for:

- contamination of food with insects and rodent filth.
- microbiological contamination, and pesticide residual violations.
- lack of basic food hygiene and failure to meet labeling requirements.

These violations vary by region of the world, and the FDA data confirms that sanitary and phytosanitary standards are important challenges to fresh food product exports from developing countries. How to manage and reduce those risks is important.

Management of Food Safety Hazards: Actions To Insure Food Safety In Export Market

Sanitary and phytosanitary measures (law, regulations, procedures) adopted by governments to protect animal, plant, or human health. Health-related laws and regulations take many forms and vary depending upon the risks being protected against.

International trading rules embodied in the General Agreement on Tariffs and Trade (GATT) have always recognized the right of each country to adopt and maintain any measures deemed necessary to protect human, animal or plant health. However, until recently, the rules were so vague that many countries used "health requirements" as barriers to trade.

Changes to the GATT rules embodied in the Uruguay Round Agreement on Sanitary and Phytosanitary Measures (SPS Agreement) address these concerns by disciplining the use of sanitary and phytosanitary measures. These changes discourage the use of unjustified health-related measures as disguised barriers to trade through agreement that such measures should be science-based. The North American Free Trade Agreement establishes similar rules with respect to trade between the United States, Canada, and Mexico (FAS, 2000).

Public programs for food safety tend to be quite varied, as different combinations of actions may assure safe food by government, industry, and consumers. Governments frequently undertake food legislation and inspections programs but also stimulate voluntary quality control programs in industry and provide consumer education.

Many hazards are expensive to test for and may enter food products at several points in production process. An emphasis on prevention and control of hazards through good agricultural and manufacturing practices is becoming the most cost effective means of reducing food safety hazards.

The Hazards Analysis Critical Control Points (HACCP) system is a subset of more general quality management systems, and is used to address food safety hazards that can be introduced at different points in the food chain or are difficult to measure.

Food Inspection and Control of Standards of Health and Hygiene

The premise here is that free trade is good for any country including the United States and agricultural trade is not only good for the U.S. economy,

Table 3. U.S. Imports of agricultural products from developing countries (million \$).

	1995	1996	1997	1998	1999	% Change
<i>Consumer Oriented</i>	8033	9111	9559	10169	11115	38.37
Snack Food	247.5	285.7	326.2	370.3	443.4	79.15
Red Meat, Fresh/Chilled/Frozen	121.7	130	131.8	103.8	158.7	30.40
Red Meat, Prepared/Preserved	259.7	235	227.4	255.8	246.6	-5.04
Cheese	68.9	48.7	54.1	72.8	76.4	10.89
Other Dairy Products	60.9	72.6	58.1	75.3	65.2	7.06
Banana and Plantains	1115	1158.4	1189.7	1172	1171.9	5.10
Other Fresh Fruits	906.7	1061.8	1108.1	1290.7	1620.6	78.74
Fresh Vegetables	1202.5	1393.6	1361.9	1682.9	1528.7	27.13
Processed Fruit and Vegetables	1085	1150	1211.7	1185.5	1392.3	28.32
Fruit and Vegetable Juices	490.3	752.3	654.2	549.7	681.9	39.08
Imports from Developing Countries	16492	18024	19340	19045	18924	14.74
Total Import	30106	33352	35976	36682	37503	24.57
Percent Imports from DC	55	54	54	52	50	

Source: FAS/USDA (2000).

Table 4. Potential Food Safety Hazards in Fresh or Minimally Processed Foods.

Hazards	Fruit/Vegetables	Seafood/Fish	Meat and Poultry
Microbial Pathogens	X	X	X
Zoonotic Diseases			X
Parasites		X	X
Adulterants	X	X	X
Mycotoxins	X	?	X
Antibiotic Drug Residues		X	X
Pesticide Residues	X	X	X
GMOs	X	?	?

**Table 5. U.S. FDA Import Detentions by Product Category, January – May 1999
(number of detentions for the top 5 product categories plus meat products).**

Product Category	Number of Detentions
Vegetables / Vegetable Products	1,991
Fishery / Seafood Products	1,661
Fruit / Fruit Products	962
Candy w/o Choc/special/Chew gum	345
Spices, Flavors and Salts	212
Meat, Meat Products, and Poultry	8

Source: U.S. FDA Import Retention Reports (available at <http://www.fda.gov/ora/oasis/ora_oasis_det.html>).

but for world food Security. There are however instances where food safety is being used by countries as a trade barrier: for example, the United States had a history of problems with the European Union regarding such food Safety issues as hormones and anti-microbial treatments; Korea recently had a concern about a positive test for E. Coli 0157:H7 is boxed beef originating from a U.S. plant

That is why it is important the That is why it is so important that the Uruguay Round of the

General Agreement on Tariffs and Trade (GATT) established the principle that countries must ensure that their sanitary and phytosanitary measures are based on science and risk assessment principles. It is essential to push for science-based standards as a means of avoiding trade disputes.

There will however be disagreements about what exactly those standards should be. They need to be carefully established, with new emphasis on microbial testing, to clarify what is meant by safe

food. In the U.S. there are three components to food safety strategy, as it relates to international trade. First to ensure that the U.S. domestic food safety programs are science-based and consistent with international trade obligations. Second, there is a sound system to ensure the safety of meat and poultry products imported. And third, commitment to the development of international food safety standards through the Codex Alimentarius Commission as a means of harmonizing standards upward to the highest level of food safety. (C. Woteki, 1997).

In general food safety for which the responsibility is divided among several ministries, in developing countries, faces serious difficulties. The tasks of controlling standards of health and hygiene in food production have not taken over by many DCs, and programs designed to enforce health and hygiene standards have maintained very little funding.

- There are only few activities involving preventive inspection or education.
- There is a lack of data for evaluating the effectiveness of the enforcement system for health standards, morbidity and mortality related to illness of food-borne origin.
- There is a lack of implementation of the basic elements necessary for an effective national strategy for control of health and hygiene standards for food production.

Public sector in DCs can play important role in testing and certifying certain kinds of exporting quality, such as whether a country is free of an animal disease. Example of another actions may be to institute new kinds of regulation that may be recognized by the importer as providing the basis for safer production, such as HACCP. The public sector in the importing country may also facilitate trade by providing pre-certification for exports through in-country inspections of the production process. This can substantially reduce costs associated with detentions and rejections. The public sector can make investments in infrastructure, such as cold storage facilities in a fishing port that improve food processing.

Food Safety Used As a Trade Barrier and World Trade Organization (WTO)

While exporters must meet the quality and safety demanded by import market consumers,

there are international trading rules to ensure that public standards are applied fairly and equally to both domestic and imported products. When an exporter is denied access due to sanitary or phytosanitary standards, there is recourse for WTO members under the WTO disputes process if the action appears to be unfounded or unfair. The 1994 GATT agreement include the Agreement on the Application of Sanitary and phytosanitary Measures (SPS agreement).

There is a mechanism in place for addressing situations where food safety is being used as a barrier of trade – namely the World Trade Organization (WTO). Through the WTO mechanism unfair trade barriers relative to food Safety can be challenged on the merits of Sound Science. Therefore with the WTO, there is a scientifically based approach to negotiation and conflict resolution to keep food safety from being an intractable barrier to trade.

The SPS agreement covers trade measures that protect human, animal, or plant life or health. It sets out several ground rules for such measures, with the intent of ensuring that they do not pose unfair barriers to trade. These “ground rules” include:

- Transparency – Nations are required to publish their regulations and provide a mechanism for answering questions from trading partners.
- Equivalence – Member nations must accept that SPS measures of another country are equivalent if they result in the same level of public-health protection, even if the measures themselves differ. The same level of health protection should apply to both domestic and imported products.
- Science-based measures – Regulations cannot impose requirements that do not have a scientific basis for reducing risk.
- Regionalization – The concept of pest or disease-free areas within and exporting country is recognized. Exports can be allowed from such areas, even if other areas of an exporting country still have the disease or pest.
- Harmonization – Member nations recognize the desirability sources of internationally agreed-upon standards: the Codex Alimentarius Commission, the International Office of Epizootics, and the International Plant Protection Convention.

- National Sovereignty – Countries may choose a risk standard that differs from the international standard. This recognizes that individual nations are willing to subscribe to uniform international standards for all hazards.
- Dispute Resolution – There is a clearly defined mechanism for resolving disputes between countries in a timely manner. The dispute settlement panel is expected only to state whether the SPS measures under questions have a scientific basis and are consistently applied.

Conclusions

The structure of international trade in agricultural products for developing countries has changed significantly over the last decades. There has been a substantial increase in exports of fresh fruit and vegetables and related productions, compared to manufactured or processed products. At the same time consumers in developed countries are more aware of food safety issues and demanding healthy food. Time and again potential exporters and importers have regarded health and phytosanitary issues and regulations and other trade impediments as barriers to free trade. As a result, food safety issues are becoming more important in international trade with implications for developing agribusiness sector in developing countries.

Both public and private sectors have role to play in improving food safety. Overall, the tendency for increased international trade fresh food products should lead to a restructuring of food safety policies in developing countries. In many of the developing countries existing safety controls are ineffective in assuring the safety of food pro-

duced. At the same time some overly restrictive food legislation can cause non-tariff trade barriers. Successful export market development will also require public actions by DC governments. Those actions will vary with the type of product, hazard, and the level of country's development.

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