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Food Safety Issues in Agricultural Trade

Food safety is now one of the most urgent issues that confront both Asia as a region and the international community as a whole. Consumers are becoming increasingly concerned over food quality and safety arising from the globalization of trade in food, intensive agriculture, environmental pollution and natural and manmade disasters. Such concerns have now been articulated via higher quality and safety standards required by markets, with producers under greater pressure to meet such standards in their efforts to build consumers' confidence.

For the developing countries in Asia, quality and safety management systems, product certification and standardization regarding food safety and quality are still in their infancy and need immediate attention. Governments should provide the legal framework and platform to facilitate the implementation of food quality and safety management systems.

Comprehensive management systems such as international agreement, standards, protocols, guidelines, and assigning the certification bodies are indicative of the serious efforts under way in many countries to ensure food quality and safety. Efforts to bring national standards up to international levels will significantly enhance the competitiveness of agricultural products in the world market.

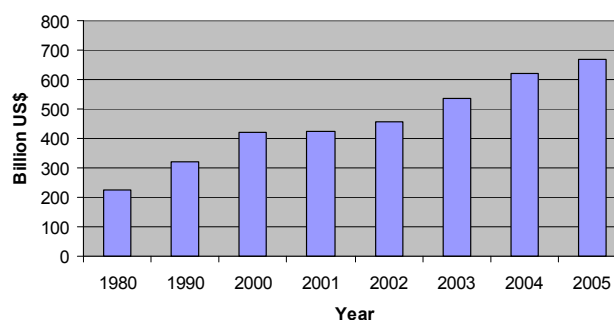
To further tap into the potential of the agriculture and food industry, strong policy strategies on food quality and safety are absolutely imperative, with focus given on a holistic approach and a farm-to-table approach, as an effective means of reducing food hazards. In addition, the measures to enhance food safety and quality should include tax incentives, training and education programmes, media awareness campaigns, international cooperation and related policies.

Agricultural Trade and Food Quality/Safety

In Asia, developing and low-income countries remain heavily dependent on agriculture. In the last four decades, agricultural production focused on intensive agriculture or quantity-driven agriculture based on high-yielding varieties, mono-cropping, high input of chemical fertilizers and pesticides, and larger subsidies from the government. Such production sparked an increase in agricultural productivity in Asia. Recently, unfavorable trends regarding the effects of intensive agriculture on environmental sustainability and human health have triggered a shift from quantity-driven to quality-driven agricultural production.

The value of world agricultural trade including fishery and forestry products has increased more than 3 times since 1980 to reach around US\$ 669 billion in 2005 (see Figure). The global agricultural products and food trade provide opportunities for agricultural exporting countries to earn foreign exchange, which is indispensable for the economic development of many countries and for improving the living standards of rural populations. By supplying enough foods in the markets, those also offer many benefits to consumers, as it results in a wider variety of high-quality foods that are accessible, affordable and safe, meeting consumer demand.

Figure. Value of agricultural exports



Source: <http://faostat.fao.org/site/342/default.aspx>

However, exports of poor-quality and unsafe food to developed countries can lead to rejection of shipments, depriving the exporting countries of foreign exchange and causing trade repercussion. The growing volume of international trade in agricultural products could increase the rapid transmission of food hazards. The globalization of the agricultural and food trade has necessitated a transnational system of food production and raised the development of international food standards and awareness of food safety in developing countries.

Food Quality and Safety Assurance Systems

Unsafe food is not only a significant threat to public health and well-being, but also has economic and social consequences such as higher medical care costs, reduced productivity, and reduction of tourist visits and exports, the latter affecting particularly the rural economy.

Contamination and hazards in food and agricultural products may occur in every stage of the food supply chain, from the field to the table, i.e., production, harvesting, processing, storage and distribution. Moreover, food and feed are distributed over far greater distances than before, creating the conditions necessary for widespread outbreaks of food-borne illness. The problem is that food safety incidents become known to the general public after a damaging breakout. It is also very difficult to pin down exactly where the produce became contaminated in the food supply chain because of the difficulty in testing for microbial contamination.

Food safety hazards arise principally from: a) residues of substances used in agricultural production and processing, such as pesticides; b) bacteria and other microbial agents resulting from improper food handling; c) environmental contaminants (e.g., water, soil); and d) lack of technical and financial resources, an ineffective institutional framework, trained manpower and sufficient information about the hazards and risks involved.

The emerging policy trend focuses on promoting the adoption of the quality and safety assurance systems (QSAS) to reduce the incidence of several food hazards. The QSAS has shifted emphasis from end-product inspection and testing to prevention or control

of hazards at all stages of food production. The adoption of QSAS can aid inspection by regulatory authorities and promote international trade by increasing consumers' confidence in food safety. Developing and adopting QSAS is now a worldwide trend. However, the QSAS for food and agricultural products in developing countries is lagging considerably behind those in developed countries. Sanitary and phytosanitary regulations vary among countries. Enhanced cooperation in the formulation of food standards and adoption of QSAS is needed to facilitate agricultural trade in developing countries.

Table. Quality Management Systems and Areas of Application

| System | Strategic Purpose | Target Sector |
|-------------|---|-----------------------------------|
| HACCP | Food safety management | Food processing industry |
| GAP - EUREP | Farm management including principles of integrated production | Primary agriculture |
| ISO 9000 | Continuity of production and quality | Agriculture, industry and service |
| ISO 14000 | Contribution to global sustainability | Agriculture, industry and service |
| BRC | Food safety, document control and traceability | Food processing and retailers |
| SQF | Food safety, quality improvement | Primary and secondary agriculture |

Source: Sandra G.F. Keller, Report of the APO Study Meeting on Quality Enhancement in Small and Medium Food Processing Enterprises through HACCP, 2005, p.45.

The QSAS have typically been developed to address a specific set of issues inherent to a specific commodity or product. All systems are aimed at the formalization of procedures, but with different focus areas and benefits (see Table). The Hazard Analysis of Critical Control Points (HACCP) system is a food safety management system recognized by the Codex Alimentarius Commission, which is the internationally recognized standard for world food trade under the World Trade Organisation (WTO) Agreement. The Good Agricultural Practice - Euro-Retailer Produce Working Group (GAP - EUREP) recognized as an agricultural code of practice was created for farms and cannot be used to manage quality in,

for instance, a retail company, industry manufacturing plant or facility. On the other hand, International Standardization Organization (ISO) is widely applicable to almost any business. Some systems overlap with parts of others, i.e., the GAP - EUREP packing section partly covers HACCP; HACCP in turn covers part of British Retail Consortium (BRC); while BRC and ISO have many common themes. The Safe Quality Food (SQF) is a HACCP quality code designed in Australia especially for companies in the agri-food industry. As for the quality and safety management system in agricultural production, HACCP and GAP are most well known.

HACCP and GAP

Many industries are gearing up and applying the HACCP system in order to meet the requirements of exporting countries. The HACCP system is considered the most appropriate to ensure food safety in critical control points of food processing industries, i.e., poultry, meat, milk and milk products, fisheries, and packinghouses. The system includes the key elements of good product management, good hygiene conditions and good manufacturing practices and calls for: a) critical examination of raw materials, process and products; b) hygienic conditions from origin until it reaches the customer; c) identifying stages/process where hazards could occur; d) instituting and maintaining controls at identified stages/process; e) documenting HACCP process and keeping records; and f) ensuring that the system continues to work effectively.

Adopting HACCP on the farm, particularly, producers of fresh fruits and vegetables, is extremely difficult due to complicated processes and scientific approach required. Instead, many participants in the food supply chain have been paying attention to the GAP system as an on-farm safety assurance system. GAP is being promoted worldwide as a comprehensive risk management approach to the production cycle of agricultural products. GAP is designed to secure food safety and promote environmentally-sustainable agricultural production activities.

GAPs developed in many countries, however, vary due to the difference in driving forces and the agricultural policies of each country. The

GAP - EUREP aims not only to assure food safety but also to establish the standard of global GAPs in broad areas of agriculture. GAP - US is focused on preventing the microbial contamination of fresh produce. Agriculture as an important industry in the United States, prefers a more open trade system. The European Union (EU) and Japan, however, prefer to add conditions on supplying safe food to consumers and to make trade barriers to safeguard domestic agriculture. Moreover, leading retailers and consumer cooperatives have established their own quality and production standards and have asked agricultural producers to observe these standards. This trend is expected to expand and accelerate in the future to secure food safety. Whether these standards are truly based on consumer needs or are determined by retailers without taking the actual needs of consumers into account is an open question. Food safety and quality standards should be based on scientific evidence with an appropriate risk assessment implemented in a fair and transparent manner.

The adoption of modern HACCP and GAP by small and medium-sized food processing enterprises (SMEs) and farms is inevitable in order for them to be more competitive in the international market, especially in view of trade liberalization under the initiatives of the WTO. In addition, implementation of such quality assurance systems will enable the SMEs and farms to further contribute to improving public health and strengthening the national economies in the region.

The major constraints in the adoption of an international QSAS for developing countries are: a) lack of financial resources to upgrade the factories, equipment and facilities to comply with the necessary legal requirement; b) lack of awareness on QSAS among the participants; c) high cost of implementation of QSAS; d) limited number of technical personnel with good understanding of QSAS; e) limited dissemination of QSAS information; and f) marketing and distribution difficulties.

Policy Options and Action Plans

In view of the above trends, enhancing the quality and safety of food and agricultural products, and sustainable agriculture practice, the following policy options and action plans

may be worthy of consideration by policy-makers.

Governments should provide the legal framework and platform to facilitate the implementation of QSAS. An active government intervention or initiatives including regulatory, legislation, assistance and incentive programmes, capacity building, certification programmes and campaigns to support QSAS are required. Especially, a coherent and proactive policy is the most critical factor to establish an environment for supplying safer and quality agricultural products and food. Policy options and actions include:

- Enactment of national/regional standards and regulations through adoption of EU and other international standards (e.g., Codex, ISO, HACCP, GAP - EUREP), complying with international legislation and requirements under the WTO and other applicable treaties, ensuring consumer safety and preventing dishonest practices in the production and sale of foods.
- Designation of government authorities or agencies responsible for managing the risk related to unsafe food including continuous monitoring and assessment; Establishment of a QSAS Implementation Committee involving all interested parties, i.e., concerned government agency, food industry, private consultants, and regulators.
- Introducing incentive programmes (e.g., loans, tax deductions, subsidies) for upgrading the factories and laboratory facilities to meet with the necessary legal requirements and to accelerate the implementation of QSAS.
- Development of QSAS guidance materials (e.g., manual, guidelines, leaflets, etc.) and generic models for priority products; Increased awareness of food hygiene and QSAS through workshops/seminars on dissemination of government policies and programmes to promote adoption of comprehensive QSAS.
- Strengthening capacity building in food QSAS education at various levels (e.g., university, vocational institute, SMEs) to strengthen research, monitoring and information system for regulatory personnel.
- Enhancement of awareness of food hygiene and QSAS among consumers, exporters, industries, suppliers through national media

campaigns and demonstration plants and farms having high level hygiene to promote an understanding of the importance and benefits of HACCP and GAP and their application in farms, manufacturing and service industries and to promote and facilitate food quality and a culture of safety.

International collaboration is also critical to enhance partnerships among nations, harmonize standards, assist in capacity building and R&D cooperation, transfer existing technology to developing countries, particularly for food safety assurance and its adaptation, make a food safety chain in each country, and share the information on internationally traded foods. Actions include the following:

- Harmonization of standards/practices, certifications and testing through international/regional collaboration to reduce gaps between companies, national and international standard and adoption of necessary legislation. It may remove the cause of trade conflicts and disputes due to adoption of varied standards and regulations by different importing countries and companies.
- Establishment of the Asian Association for Food Safety, promoting and practicing the HACCP and GAP schemes and harmonizing their practices so that Asia will have a strong bargaining power in terms of agricultural trade with countries in other regions.
- Engagement of international consultants or experts from developed countries and UN organizations (e.g., FAO, UNESCAP, UNIDO, WHO, etc.) will give an opportunity to share the latest developments in QSAS to developing countries in the region.

A number of tools are now available for governments in the region to address consumer concerns over food quality and safety arising from the globalization of trade in food, intensive agriculture, environmental pollution and natural and manmade disasters. With such tools in place, governments can provide the legal framework and platform to facilitate the implementation of food quality and safety management systems in their respective countries. Along with support from international institutions in the region, governments can now take a more proactive role addressing food

safety concerns, reducing significant threats to public health and well being, and the long-term economic and social fallout.

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