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REPORT ON APEC REGIONAL FOOD SAFETY STUDY

APEC Agricultural and Technical Working Group

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APEC Secretariat
35 Heng Mui Keng Terrace Singapore 119616
Tel: (65) 67756012 Fax: (65) 67756013
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ATCWG Focal Point of Vietnam
International Cooperation Department
Ministry of Agriculture and Rural Development
Tel: (84-4) 8437674
Fax: (84-4) 7330752
Email: dunght.htqt@mard.gov.vn; hhanh.htqt@mard.gov.vn
2 Ngoc Ha - Ha Noi - Viet Nam

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LIST OF ABBREVIATIONS

ACFS	Agricultural Commodity and Food Standards, National Bureau of (Thailand)
AFS	APEC Food System
AFTA	ASEAN Free Trade Area
ANZFA	Australia New Zealand Food Authority
APEC	Asia Pacific Economic Cooperation
AQSIQ	Administration of Quality Supervision, Inspection and Quarantine (China)
ASEAN	Association of Southeast Asian Nations
ATCWG	(APEC) Agricultural Technical Cooperation Working Group
BSE	Bovine Spongiform Encephalitis
CCFICS	Codex Committee on Food Inspection and Certification Systems
CCP	Critical Control Point
CFIA	Canadian Food Inspection Agency
CoC	Code of Conduct
Comecon	Council for Mutual Economic Assistance
CSF	Classical Swine Fever
CTI	Committee on Trade and Investment (APEC)
EFA	European Food Authority
EurepGAP	European Union Retailer Produce Working Group - Good Agricultural Practices
FAO	Food and Agriculture Organization
FMD	Foot and Mouth Disease
FS	Food Safety
FSANZ	Food Standards Australia New Zealand
GAP	Good Agricultural Practice(s)
GDP	Gross Domestic Product
GHP	Good Hygiene Practice
GMO	Genetically Modified Organisms
GMP	Good Manufacturing Practice(s)
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit

HACCP	Hazard Analysis and Critical Control Points
IFOAM	International Federation of Organic Agricultural Movements
IPM	Integrated Pest Management
IPPC	International Plant Protection Convention
ISO	International Organization for Standardization
ISPM	International Standards for Phytosanitary Measures
MAFF	Ministry of Agriculture, Forestry and Fisheries (Japan)
MARD	Ministry of Agriculture and Rural Development (Viet Nam)
MHLW	Ministry of Health, Labour and Welfare (Japan)
MOA	Ministry of Agriculture (China)
MoAC	Ministry of Agriculture and Cooperatives (Thailand)
MOC	Ministry of Commerce (China)
MOFI	Ministry of Fisheries (Viet Nam)
MOH	Ministry of Health (Viet Nam)
MOI	Ministry of Industry (Viet Nam)
MOST	Ministry of Science, Technology and Environment (Viet Nam, China)
MOT	Ministry of Trade (Viet Nam)
MRL	Maximum Residue Levels
MSG	Monosodium Glutamate
NDDP	National Dairy Development Plan (Viet Nam)
NFA	National Food Authority (Australia)
NIS	nuts-in-shell
OECD	Organization for Economic Cooperation and Development
OIE	Office International des Epizooties (or World Organization for Animal Health)
ppm	part per million
QS	Quality Supervision
RIFAV	Research Institute for Fruits and Vegetables (Viet Nam)
SARS	Severe acute respiratory syndrome
SCSC	Sub-Committee on Standards and Conformance (APEC)
SFDA	State Food and Drug Administration (China)
SME	Small and medium enterprise

SPS	Sanitary and Phytosanitary Measures
TBT	Technical Barriers to Trade
USD	US Dollars
VASEP	Viet Nam Association of Seafood Exporters and Producers
VASI	Viet Nam Agriculture and Science Institute
VCCI	Viet Nam Chamber of Commerce and Industry
VND	Viet Nam Dong (1 USD = 16,000 VND in October 2006)
WHO	World Health Organization
WTO	World Trade Organization

1. INTRODUCTION

1.1 APEC FOOD SAFETY INITIATIVE

The APEC Food Safety Cooperation, initiated in 2005 and co-chaired by Australia and China, is identifying the information-sharing and capacity building needs of APEC member economies to improve food safety with a focus on priorities and actions not already addressed by existing activities. The food safety cooperation initiative was held by the SCSC's Steering Group on food safety cooperation. The Group was established last year to find ways to enhance APEC's cooperation in food safety cooperation.

The first Food Safety Cooperation Initiative workshop was held on the 21 February 2006 with more than 60 delegates from 18 APEC member economies. The workshop reviewed the stock take of current food safety related activities within APEC and other international and regional organizations. The stock-take will help avoid duplication of APEC's food safety work with other international and regional bodies and identify opportunities that APEC could make a difference to ensure the safety of food produced and manufactured in the Asia-Pacific region.

Following its meeting on 7 September 2006 in Viet Nam, the Ad Hoc Steering Group of the APEC Food Safety Cooperation Initiative delivered its final recommendations on how members can work together to improve food safety, including practical measures for implementation.

These final recommendations will take into consideration the stock-take of current food safety related activities (APEC, international and regional organizations) compiled by the Steering Group as well as a needs analysis identifying some key themes and priorities for action. Some preliminary priorities identified include; capacity building, harmonization and collaboration between APEC food regulatory agencies.

To address food safety issues in the APEC region and to capture the full advantages of future trade opportunities, APEC economies are working to harmonize relevant food laws and regulations among members and with relevant international organizations. A capacity building program is also planned for concerned agencies in developing member economies for effectively enforcing laws and regulations as well as developing a preventive approach to reduce the risk of food contamination.

1.2 BRIEF DESCRIPTION OF THE PROJECT

Food safety is an essential public health issue. It is a major concern for consumers, industry and government. The importance of food safety has increased significantly in recent years following a series of global events associated with incidences of contamination and outbreaks like contamination of MCPD, the mad cow disease and the foot and mouth disease, Avian influenza, ecoli etc. They are also contributed as a source of health hazard.

Food safety is also a key APEC theme. Under the framework of the WTO/SPS Agreement, it is required that the SPS measures applied by trading countries have to be in line with regulations set in the Agreement. Therefore, in November 2004, APEC Ministers considered a proposal from China to establish cooperation in food safety in order to strengthen food safety, encourage harmonisation with international food standards and promote trade facilitation.

At the APEC Summit held in Busan, Korea (17 - 19 November 2005), the APEC Ministers also welcomed the progress made by economies towards strengthening food safety cooperation across APEC and the activities of relevant international and regional organisations aimed at promoting food safety.

APEC economies aim at aligning their domestic standards with international standards, which include standards related to food safety, and the elimination of unnecessary impediments to trade in food and agricultural products. This is emphasised in the Osaka Action Agenda, which states "APEC economies will, in accordance with the Declaration on APEC Standards and Conformance Framework and with the Agreement on Technical Barriers to Trade (TBT Agreement) and the Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement) attached to the WTO Agreement:

- align their domestic standards with international standards;
- endeavour to actively participate in international standardization activities;
- promote good regulatory practice for the preparation, adoption and application of technical regulations in the APEC region;
- achieve recognition of conformity assessment including mutual recognition arrangements in regulated and voluntary sectors;

- promote cooperation for technical infrastructure development to facilitate broad participation in mutual recognition arrangements in both regulated and voluntary sectors; and
- ensure the transparency of the standards and conformity assessment of APEC economies."

Food safety is a key area of the APEC Agricultural Technical Cooperation Working Group (ATCWG), for example through its implementation of the APEC Food System (AFS). Developing member economies' systems related to food safety standards and quality management are key issues of the Committee on Trade and Investment (CTI) in order to promote the trade in food products.

In recent years, a series of APEC food safety events have been cooperated and discussed as well as created which aim to improve coordination and develop a framework to strengthen cooperation in food safety activities across APEC economies as well as to share information and build capacity in the region to harmonize food safety regulatory frameworks with existing international food standards.

At the Food Safety Cooperation Seminar (Gyeongyu, Korea, 6-7 September 2005), APEC experts on food discussed food cooperation and progress within APEC to date. They also agreed on priorities and to develop a framework for food cooperation in APEC. The seminar proposed that APEC members work together to strengthen food cooperation by coordinating between the relevant working groups, including SCSC, in order to bring together various APEC activities related to food. Coordination would allow APEC to:

- initiate a Collective Action Plan to achieve harmonisation with international standards on food in APEC member economies.
- facilitate capacity building on food safety.
- facilitate capacity building in meeting SPS requirements
- establish a network of APEC focal points to share information on food.

The Collective Action Plan would identify and examine the major issues to be addressed in order to improve food safety outcomes and progress APEC economies harmonisation with existing international standards on food. This may include:

- suggestions on how to coordinate APEC activities better.

- development of guidelines on priority areas for information sharing. For example, food regulation, standards relating to the import and export of food.
- collective identification of key emerging issues and potential emerging issues.
- mechanisms for sharing expertise in risk analysis.
- promoting best practice on major developments in food regulation and practice, for example HACCP.
- developing a system for the recognition of equivalence based on the Codex Committee on Food Inspection and Certification Systems (CCFICS).

Added, an Ad-hoc Working group was established, which has then met twice, one in September 2006 in Ha Noi and one in September 2006 in Da Nang, Viet Nam. It has agreed on details of the APEC Food Safety Cooperation Initiative which was subsequently endorsed by the Sub-committee on Standards and Conformance (SCSC) and by the Committee on Trade and Investment (CTI). The goals of this initiative will assist APEC economies to (Nicole, 2006):

- Develop transparent information sharing and communication networks that provide accurate time and information to consumers and producers on food safety;
- Work towards establishing food safety regulatory systems, including food inspection/assurance and certification system that harmonize with international standards and regulation and are consist with the SPS and TBT/WTO;
- Enhance skills and human resource capacities to enable the development of national food safety regulatory frameworks that harmonized with international standards.

The purpose of the present project is to strengthen the regulatory framework and implementation capacity for food safety and quality control in APEC. The outcomes of the project will contribute to the work of the APEC food safety cooperation. The core activity of the project includes a survey in Viet Nam on a number of food commodities regarding food safety aspects and the implementation of management systems for food safety and quality control. A regional workshop was held in Viet Nam (9 – 10 October 2006) as a forum to discuss and exchange on the APEC food safety regulatory, collect information on the current status of food safety in APEC member economies as well as to consult on the possible joint-actions that APEC should do for the benefits of a

healthy APEC society. Added, the outcomes from the workshop were used as important inputs for the project study. After the workshop, test programs will be designed and implemented in Viet Nam on the formulation of a national action plan on the critical issues identified by the study. Results of these programs as well as other information from the study and the workshop will be published through various media to the stakeholders and the general public.

Generally, the project responds to APEC Leaders and Ministers commitment to achieve free and open trade investment in the Asia-Pacific Region, which was referred to as "Bogor Goals". Enhancing developing APEC economies' capacity to keep up with the current trend in food safety standards is one way to achieve free and open trade. Moreover, APEC recognizes the importance of capacity building in trade facilitation, especially for developing member economies, and has supported initiatives in customs, standards, business mobility and e-commerce.

1.3 PROJECT OBJECTIVES

The project aims to strengthen the regulatory framework and implementation capacity for food safety and quality control in APEC.

The **key objectives** of the project are as follows:

- To align national guidelines and regulations on food safety and food safety management systems in the studied member economies with current international standards;
- To increase the understanding among leading companies in the key sectors studied on food safety and quality management;
- To strengthen the national network on food safety and quality management;
- To improve the capacity of local business service providers to train and advise enterprises on the implementation of improved management systems (e.g. HACCP).

The intended **beneficiaries** of this project and their benefits from the project are as follows:

a. Government institutions: Ministry of Agriculture (and its institutions in charge of Plant Protection, Animal Health, Science and Technology and the National WTO/SPS Enquiry Point and Notification Offices), Ministry of

Health (and its institutions in charge of Food Quality, Sanitary and Safety Management), Ministry of Science and Technology, Ministry of Trade.

Benefits at the Government level include: improved networking among APEC members, national legislation and regulations in line with those of other APEC members as well as international organizations such as the WTO, improved legislation and improved regulatory and management capacity.

b. Private and state-managed enterprises producing and/or processing agricultural products: improved management systems for food safety and quality control (leading to better access to export markets by applying internationally recognized standards and improved credibility in the local and export market);
c. Business service providers: improved capacity to deliver advise and training on food safety and quality control management systems (e.g., HACCP);
d. Research institutions: improved technical knowledge on food safety issues and quality management, improved international networking.

1.4 SOME KEY CONCEPTS

The concepts of food safety and food quality can sometimes be confusing. Food safety refers to all those hazards, whether chronic or acute, that may make food injurious to the health of the consumer. Food Quality refers to all attributes that influence a product's value. This includes negative attributes such as spoilage, contamination with filth, discoloration, off-odours and positive attributes such as the origin, colour, flavour, texture and processing method of the food.

This distinction between safety and quality has implications for public policy and influences the nature and content of the food control system most suited to meet predetermined national objectives. Food control is defined as:

"….*a mandatory regulatory activity of enforcement by national or local authorities to provide consumer protection and ensure that all foods during production, handling, storage, processing, and distribution are safe, wholesome and fit for human consumption; conform to safety and quality requirements; and are honestly and accurately labeled as prescribed by law" (FAO and WHO).*

The responsibility for food control is to enforce the food law to protect the consumer against unsafe, impure and fraudulently presented food by

prohibiting the sale of food not of the nature, substance or quality demanded by consumers.

The safety and integrity of the food supply is an important requirement for consumers. Food borne disease outbreaks often related to microbial such as *Escherichia coli, Salmonella* or chemical contaminants sometimes cross contamination of several agents. The highlight problems on food safety and increase public anxiety that modern farming systems, food processing and marketing do not provide adequate safeguards for public health.

Factors which contribute to potential hazards in foods include improper agricultural practices; poor hygiene at all stages of the food chain; lack of preventive controls in food processing and preparation operations; misuse of chemicals; contaminated raw materials ingredients and water; inadequate or improper storage, etc.

The food hazards have usually focused on:

- Microbiological hazards;
- Pesticide residues;
- Misuse of food additives;
- Chemical contaminants, including biological toxins; and
- Adulteration.

The list has been extended to cover genetically modified organisms, allergens, veterinary drugs residues and growth promoting hormones used in the production of animal products.

Consumers expect protection from hazards occurring along the entire food chain, from primary producer through consumer (farm-to-table). Protection will only occur if all sectors in the chain operate in an integrated way, and food control systems address all stages of this chain.

Food safety management System is Guidelines to describe the integration of a mandatory regulatory approach with preventive and educational strategies that protect the whole food chain. The Management system should include effective enforcement of mandatory requirements, along with training and education, community outreach programmes and promotion of voluntary compliance. For instance in industry the introduction of preventive approaches such as the Hazard Analysis Critical Control Point System (HACCP) or Good Agricultural Practices (GAP) have resulted in industry and Agricultural production taking

greater responsibility for food safety and control of food safety risks. Such an integrated approach facilitates improved consumer protection, effectively stimulates agriculture and the food processing industry, and promotes domestic and international food trade.

Codex Alimentarius

Internationally, food safety standards are defined by Codex Alimentarius, although increasingly, private sector buyers or consortia of private buyers, GAP, are defining often protocols concerning other than food safety standards, and have sometimes stricter standards than those of the international bodies.

Codex is focusing on reforming food control systems not merely to ensure to promote the safety of food sold on the domestic market but also to assure the safety of products entering international trade. Codex standards are the key reference standards for APEC and WTO.

Good Agricultural Practices (GAPs)

GAPs are a collection of principles to apply for on-farm production and post-production processes, resulting in safe and healthy food and non-food agricultural products, while taking into account economical, social and environmental sustainability.

GAPs may be applied to a wide range of farming systems and at different scales. They are applied through sustainable agricultural methods, such as integrated pest management (IPM), integrated fertilizer management and conservation agriculture. They rely on four principles:

- Economically and efficiently produce sufficient (food security), safe (food safety) and nutritious food (food quality);
- Sustain and enhance natural resources;
- Maintain viable farming enterprises and contribute to sustainable livelihoods;
- Meet cultural and social demands of society.

They provide the opportunity to assess and decide on which farming practices to follow at each step in the production process. For each agricultural production system, they aim at allowing a comprehensive management strategy, providing for the capability for tactical adjustments in response to

changes. The implementation of such a management strategy requires knowing, understanding, planning, measuring, monitoring, and record keeping at each step of the production process. Although the main focus of GAPs is often to reduce risks of microbial and pesticide contamination, additional benefits include worker safety and protection of the environment.

One important GAP program is the EurepGAP programme. EurepGAP, founded in 1997 at the initiative of retailers belonging to the Euro-Retailer Produce Working Group (Eurep), works to develop widely accepted standards for global certifications of good aquaculture practice (GAP).

Good Manufacturing Practices (GMPs)

Similar to GAPs, are sets of regulations, codes, and guidelines for the manufacture of, among other, food products. Important elements of GMPs are documentation of every aspect of the process, activities, and of operations and traceability.

Hazard Analysis and Critical Control Points (HACCP)

HACCP is a systematic method used in the food industry to identify potential food safety hazards, so that key actions, known as *Critical Control Points* (CCPs), can be taken to reduce or eliminate the risk of the hazards being realised. The system is used at all stages of food production and preparation processes. The primary factor in the implementation of HACCP is a shift toward reliance on systems rather than individual defect.

ISO (International Organization for Standardization) standards

ISO is a global network that identifies what International Standards are required by business, government and society, develops them in partnership with the sectors that will put them to use, adopts them by transparent procedures based on national input and delivers them to be implemented worldwide.

ISO standards are considered intellectual property and can only be acquired through ISO or recognised bodies. ISO doesn't certify which means that if an organisation wishes to get certified that they are following ISO standards they need to contact consultancy companies and the like to do the certification and control. ISO standards may be adopted as a national standard by the ISO members and translated into national legislation.

In 2005, ISO issued a new standard specific to food safety, the ISO 22000 standard. ISO 22000 is a specific standard for food processors setting out safety management procedures. The standard extends the ISO 9001:2000 quality management system standard, which is widely implemented in all sectors but does not specifically address food safety. The ISO 22000 standard combines generally recognised key elements to ensure food safety along the entire food chain including: interactive communication, system management, control of food safety hazards through pre-requisite programmes and HACCP plans, and continual improvement and updating of the management system.

Organic agriculture

Organic agriculture is a form of agriculture, which avoids or largely excludes the use of synthetic fertilisers and pesticides, plant growth regulators, genetically modified organisms (GMOs), and livestock feed additives. As far as possible organic farmers rely on crop rotation, recycling of crop residues, animal manures and mechanical cultivation to maintain soil productivity and tilth, to supply plant nutrients, and to control weeds, insects and other pests. Organic farming is also often associated with support for principles beyond agricultural practices, such as fair trade and environmental stewardship.

Increasingly, organic farming is defined by formal standards regulating production methods, and in some cases, final output. An international framework for organic farming is provided by IFOAM. Legislated standards are established at the national level, and vary from country to country. In recent years, many countries have legislated organic production, including the EU nations (1990s), Japan (2001), and the USA (2002). Codex approved guidelines for organic plant production in 1999, followed by guidelines for animal production in 2001.

As of 2006, the APEC region had ten countries with a national organic regulation (Australia, Chile, Japan, Malaysia, Mexico, Philippines, Thailand, Republic of Korea, Chinese Taipei, USA). However, in some countries the regulation is still not fully implemented. Several countries are in the process of drafting regulations or have almost completed the process (Canada, China, Hong Kong, Indonesia, Peru, and Viet Nam), while New Zealand has voluntary standards.

Supply chain

A supply chain is defined as the network of retailers, distributors, transporters, storage facilities and suppliers that participate in the sale, delivery and production of a particular product.

Value chain

Originally, the concept of the value chain referred to the value generating activities of an organization in bringing a product or service to the market. But, with time and due to the strong development of supply chains as companies tended to specialise and leave other activities for outsourcing the concept has extended beyond individual organisations, increasingly referring to "a string of companies working together to satisfy market demands." The value chain typically consists of one or a few primary value (product or service) suppliers and many other suppliers that add on to the value that is ultimately presented to the buying public.

The value chain analysis takes point of departure in the market and defines buyer demand. Based on these criteria it moves backwards in the value chain analysing how value-added to the product or service is distributed among the actors in the value chain. In sequence the analysis moves to define how supply and production should be better organised in order to meet/satisfy the market.

2. STUDY METHODOLOGY

The key activity under this project is an analysis in Viet Nam of a number of food commodities with regards to food safety aspects and the implementation of management systems for food safety and quality control. The analysis was organized and implemented following the steps described below:

Step 1 - General literature review
An extensive review of the current literature available on the topic.

Step 2 – Selection of key commodities
A number of commodities were selected for a more in-depth analysis based on their relevance to the domestic market or export market, the availability of additional literature and other, more practical considerations. The commodities thus selected were the following:

- Fruits and Vegetables
- Street food
- Tea
- Cashew
- Dairy products (Milk)

Step 3 – In-depth analysis of key commodities
The study team carried out a more detailed literature review for the selected key commodities. In case of information gaps, interviews were held with some key stakeholders or field visits were made. As much as possible, the data collection was conducted using a participatory approach and included key representatives of the private and state sectors as well as line (ministerial) institutions concerned with food safety and/or the export of agricultural products. The in-depth analysis focused on food safety aspects, including quality control mechanisms and management systems, for the different key products selected.

Step 4 – Preparation of draft report
The results of the general literature review and of the in-depth analysis of key commodities were collected in a draft report.

Step 5 – Regional workshop
APEC regional workshop is held in Viet Nam to gather inputs from APEC member economies for the study and to discuss policy recommendations. The

workshop will involve major stakeholders, including representatives of local consumer organizations. The draft report will be finalised with using the results of the regional workshop.

Step 6 – Follow up activities

a. Design and implementation of test programs on the formulation of a national action plan on the critical issues identified by the study.
b. Design of follow-up programs to test recommended policies and findings and design of education and awareness raising programs for stakeholders.

3. FOOD SAFETY IN RELATION TO APEC AND INTERNATIONAL TRADE

3.1 FOOD SAFETY IN APEC

3.1.1 Overview

In most countries, food is a high profile issue. As the old saying goes "food is life" and people around the world are taking an enormous interest in food related matters. In addition, factors such as the increasing mobility of people and the steady growth in world food trade, which is now in excess of USD 500 billion[1], are making food regulation and standards matters of global interest. Developing countries are gaining an increasing share of this trade. While the challenges of food regulation may be different as between developed and developing countries the responsibilities for health protection are universal imperatives that all governments take seriously. It is clear that more and more countries are beginning to focus on reforming food control systems not merely to ensure to promote the safety of foods sold on the domestic market but also to assure the safety of products entering international trade. (New Zealand, 2005)

At the present, APEC includes 21 member economies, developing and industrialized, taking up to 1/3 world population and 52% total territory, 70% natural resources and the region contributes to 60% worldwide GDP and 47% world trade transaction. Food is a significant sector for all APEC member economies. Over USD 167 billion in food products were traded in the APEC region in 2003. Food safety is a key factor for improving public health and safety and facilitating trade in food for APEC economies.

[1]: FAO Trade Statistics

Trends in global food production, processing, distribution and preparation present new challenges to food safety. Food and feed are distributed over far greater distances than before. Therefore food-borne disease outbreaks can also be widespread. In a recent crisis, more than 1500 farms in Europe received dioxin-contaminated feed from a single source over a two-week period. Food produced from animals given this contaminated fodder found its way onto every continent within weeks. The effects of exposure to dioxin from this source on public health may become known only after years of investigation. The international spread of meat and bone meal prepared from cattle affected by Bovine Spongiform Encephalitis (BSE) needs no further description. (WHO, 2002)

Countries in East and Southeast Asia have recently seen outbreaks of SARS and Avian Influenza. Food and Mouth Disease (FMD) has also seen some outbreaks in the past few years. All these food-borne problems quickly turned into regional problems, with even concerns for developing into global problems. The full economic consequences of such incidents and the anxiety raised among consumers are still being assessed but it can be said with certainty that the impact has been profound and will be long lasting.

Greater life expectancy and increasing numbers of immuno-compromised people mean a larger vulnerable population for whom unsafe food is often an even more serious threat. It is likely that the problems related to food safety will increase in the 21st century especially as several global changes including population growth, poverty, international trade in food and animal feed etc. continue to negatively influence the safety of food and drinking water. (WHO, 2002)

Food safety not only directly associates with public health, but also has huge impact on the national trade. Along with economic globalisation and increase of international food trade, many countries have drawn up strict laws, regulations and standards for food. At present, food safety has become a great global strategic issue and attracted more and more concerns among governments and consumers.

APEC economies have made considerable progress to harmonise their approaches to food regulation in line with international standards. However, at this stage, progress within APEC has been uneven. There are still many different food regulatory systems across the region and a significant number of economies would benefit from capacity building. Strengthening food cooperation among APEC economies can build their capacity to harmonise

their food regulatory systems with existing international standards for the benefit of all APEC economies. Meeting international standards for foods is the key to improving quality and safety of food and expanding trade in food products.

The 21 economies of APEC own different economical bases and regulatory/legislation systems. Some are WTO members, some are not, and they follow different rules of conduct. Hence, unifying these rules of conduct plays a very important role in enhancing food trade within APEC.

There are many examples of some obstacles to food trade among APEC members. The reason is often the disparity in food safety standards or in the legal provisions. For instance, Australia stipulates that the maximum content of 3-MCPD in sauce cannot exceed 0.02 ppm while Viet Nam and Thailand accept a maximum of 1 ppm. Similarly, the USA, Thailand and Viet Nam prohibit the using of cyclamates in food additives while Indonesia, Australia and China allow them.

It is important that APEC economies work together to ensure that capacity building is better coordinated, meets the needs of individual APEC economies and is directed towards achieving harmonisation of their food regulation systems with international standards. Identifying priorities for capacity building can help to guide both APEC priorities and bilateral capacity building activities in the region. This assistance would enable APEC economies to address the issues impeding the harmonisation of their food regulatory systems.

It is also important to build capacity to ensure that APEC economies meet the trading requirements under the WTO agreement, and that economies build their capacity to evaluate the food safety systems of other jurisdictions and thus allow assessments of equivalence.

Changing the approach to food safety

Food safety systems and standards. The food systems of *developed countries* have evolved over time, having incorporated many diverse scientific, technological, legal and societal advances. The food safety systems in these countries usually involve inter-related activities of various groups, guided by national food laws and regulations that include food control systems and activities that mostly address enforcement criteria such as monitoring, surveillance, inspection, hazard containment, outbreak management, education and information – essentially the primary attributes of comprehensive and

effective food safety systems. However, there are still serious shortcomings and the traditional approach to food safety in addressing all the issues of a food chain may have become ineffective. This has contributed to a lowered sense of consumer confidence in these systems. There are recent examples of efforts to develop a preventive and integrated food chain approach to address the shortcomings mentioned above, notably with the creation of the Canadian Food Inspection Agency (CFIA) and the European Food Authority (EFA).

Food systems in *developing countries* are extremely diverse and tend to be less organised, comprehensive and effective than those of developed countries. The food safety systems in these countries are challenged by problems of rapidly growing populations, urbanisation and natural environments that expose consumers to a wide range of potential food safety risks. The informal sector is often a significant producer and distributor of fresh and processed food products (including seafood and *'street'* foods) for direct consumption. Self-provisioning occurs in rural and urban areas and is correspondingly important in terms of food supply. All of these factors make effective food safety regulation and control much more difficult to achieve.

Food safety standards in developing countries may actually attain those of international standards, but the lack of technical and institutional capacity to control and ensure compliance essentially makes the standards less effective. Inadequate technical infrastructure - in terms of food laboratories, human and financial resources, national legislative and regulatory frameworks, enforcement capacity, management and coordination - weakens the ability to confront these challenges. Such systemic weaknesses may not only threaten public health but may also result in reduced trade access to global food markets.

The perceived weaknesses in the food safety situations of developing countries can be summarised as follows. Production systems tend to be extremely diverse, and often have many small-scale, unorganised producers and informal markets. The food sector is rapidly evolving in these countries, with little technical support for the introduction of new, more intensive production technologies by small and medium-scale enterprises. The food processing industrial sector is often under-financed and fragmented and there is often too little purchasing power in terms of consumer demand for food considered *safe*. Rapid rates of urbanisation, changing food production systems and consumption habits have all contributed to increased environmental risks.

Furthermore, the regulatory frameworks for food safety are often either incomplete or outdated and the systems tend to suffer from inadequate technical, institutional and managerial food control capacity. Despite these weaknesses, it is important to note that over the past ten years, many of the major food scares in developed countries (particularly in the European Union) have originated within those countries.

***A food chain approach to food safety*.** Widespread changes in the global food economy and the dynamic environment in which food safety issues must be considered have led to a more profound appreciation of just how inter-related the needs of both developing and developed countries are in terms of the strategic development of a food chain approach to food safety. There are five broadly defined inter-related needs on which to base future strategic direction in support of a food chain approach to food safety:

- Food safety from a food chain perspective should incorporate the three fundamental components of risk analysis - *assessment, management and communication* – and, within this analysis process, there should be an institutional separation of science-based risk assessment from risk management – which is the regulation and control of risk. A prudent approach to risk assessment and management should also be adopted.

- Tracing techniques *(traceability)* from the primary producer (including food products and animal feed used in the production of animal products), through post-harvest treatment, food processing and distribution to the consumer must be improved.

- Harmonisation of food safety standards, implying increased development and wider use of internationally agreed, scientifically-based standards is necessary.

- Equivalence in food safety systems – achieving similar levels of protection against food-borne hazards whatever means of control are used – must be further developed, particularly as required by the Agreement on the Application of Sanitary and Phytosanitary Measures (SPS) of the WTO.

The development of a framework for a food chain approach to food safety should be based on a strategic response to the complex set of challenges and needs areas described previously in this document. As such, a framework for the future development of a food chain approach to food safety should be broadly based on three key elements:

- *Universally adopting a risk-based approach to food safety*.
- Complementing the current, traditional emphasis on regulation and control of end products in food safety systems with a *more pronounced and comparable emphasis on prevention of food contamination at source* - including development and dissemination of good practices/safety assurance systems (i.e. HACCP).
- Increased emphasis on *ex-ante* *risk avoidance or prevention at source* within the whole food chain – *from farm or sea to table* – is necessary to complement the conventional ex-post approach to food safety management based on regulation and control.

3.1.2 Food safety strategy and food safety control in APEC member economies

The legal basic framework on food safety of the APEC members is mainly base on the "five line products" from production to the consumers. Five different Ministries and Government Authorities likes the Ministries of Agriculture to manage the whole process of food productions, quality and safety of agricultural products, Animal and Plant Quarantine, The Food quality and food processing certification by the Government Authorities or private companies has been recognised by the International body, Ministry of Health food control in the market, set up the food safety standards and management of food hygiene, Ministry of trade to ensure the consumer's right and control the food retailers and ministry of industry to manage the food processing. Beside that there are several Government Authorities also involved in the food chains depend on the management system each APEC Economic Members.

Responsibility for food safety and food safety control in most APEC countries is shared between different agencies or ministries. The roles and responsibilities of these agencies may be quite different and duplication of regulatory activity, fragmented surveillance and a lack of coordination are common. There may also be wide variations in expertise and resources between the different agencies, and the responsibility for protecting public health may conflict with obligations to facilitate trade or develop an industry or sector.

The food safety standards in APEC Economic members are based on the international standards of Codex Alimentarius, OIE, IPPC and ISO. This has been fully achieved in the developed APEC Economic member's likes USA, Australia, Singapore and Japan. According to the WTO SPS agreement each

WTO members should set up an Appropriate Level of Protection (ALOP) and should be based on the available scientific information. Among those developed APEC Economics some has set up the even higher food standards to protection the health and safety of their domestic consumers. They are also critical in enabling countries to assure the safety and quality of their foods entering international trade and to ensure that imported foods conform to national requirements.

There are several strategies of food safety control in APEC Economic member, the US of American focus more on the biological contamination to reduce the food-born illness cause of microbiological contamination on fresh fruits and vegetables, fresh produce and ready-to-eat foods. They have develop their own guidelines and American GAP to guide the producers, traders and consumers the right way of productions, handling and processing of fruits, vegetables and fresh produce. The Australian AGP focus on both aspects on Microbiological and physical contamination. Japan and Singapore is more concern with the level of chemical residue and they also set up an very low ALOP of chemical residue to protect their consumers.

The new global environment for food trade places considerable obligations on both importing and exporting countries to strengthen their food control systems and to implement and enforce risk-based food control strategies.

The Guidelines of FAO/WHO has been the definitive reference for developing countries in planning, organizing, and implementing their national food control programmes. Much has changed in the intervening period. There have been advances in the control of food-borne hazards as well as improvements in food inspection and surveillance systems. Globalization of the food supply chain, the increasing importance of the Codex Alimentarius Commission, and the obligations emerging from the World Trade Organization (WTO) Agreements have resulted in unprecedented interest in the development of food standards and regulations, and the strengthening of food control infrastructure at the country level. The challenges for food control authorities include:

- Increasing of food borne illness and emerging new food-borne hazards;
- Changing technologies in food production, processing and marketing;
- Developing science-based food safety control systems with a focus on consumer protection;
- International food trade and need to harmonization of food safety and quality standards;

- Changes in lifestyles, including rapid urbanization; and
- Raising consumer awareness of food safety and quality issues and increasing demand for better information.

Globally, the incidence of food borne diseases is increasing and international food trade is disrupted by frequent disputes over food safety and quality requirements. Several food control systems need to be revised and strengthened if improvements are to be realized. It has never been more important for developing countries to implement and enforce a food control system based on the modern concept of risk assessment.

The Guidelines provide important information on the principles and practices of food control and the trend away from a merely punitive to a preventive approach to food control. The Guidelines on food safety and quality standards should provide information for government agencies to assist in the development of national food control systems and to promote effective collaboration between all sectors involved in the management and control of food safety and quality. They highlight the importance of developing effective relationships and mutual support among government agencies and institutions involved in food control and other stakeholders, particularly the food industry and consumer groups.

To ensure the safety of the food supply, APEC must generate more comprehensive data on the incidence and causes of food-borne illnesses, and share that information around the region. International cooperation is crucial because of the significant role of trade in disease outbreaks and other food safety issues, the analysts note. Better information should make the consumer response to food-borne illnesses more consistent with actual risks.

The economists also called for the public and private sectors to work cooperatively to harmonize science-based standards and implement practices aligned with the Hazard Analysis and Critical Control Points (HACCP) system in food processing and food service. Broad educational campaigns on safe food handling practices must be continued and expanded to all income groups, the analysts say.

The lack of consistent, comprehensive data makes it difficult to establish trends about the incidence of food-borne illness in the region. Most commonly involved in food-related disease outbreaks are processed foods, fresh horticultural products, and meats—foods that are enjoying increased popularity.

Other widely recognized food safety risks include environmental toxins (e.g., lead and mercury), persistent organic pollutants (e.g. dioxin), and prions associated with “mad cow” disease.

Because of limited public resources and the strong private-sector incentives for promoting food safety, some APEC governments are implementing risk management systems that grant businesses flexibility in operational performance as long as required food safety outcomes are achieved. HACCP is mandatory in several APEC countries for certain perishable products, some of which are important to the export trade.

3.1.3 Food safety in some APEC member economies

Australia

Until 1990, food regulation in Australia was a combination of State and Territory activity and the work of a small national advisory committee that made recommendations on food standards. The committee did not consider food safety issues. As a result major differences arose between the States and Territories. This cumbersome state of affairs changed when in 1991 a national body, the National Food Authority (NFA), came into existence. It was a statutory authority established to, amongst other things, prepare food standards, co-ordinate surveillance of the food supply and advise the Australian Quarantine and Inspection Service on imported food issues. It reported to a ministerial council, the Food Standards Council, which had the ultimate say over the content of food standards. (Roche, 2002)

Australia and New Zealand have two of the most closely integrated economies in the world and therefore set up in 1996 a joint food regulatory system, the Australia New Zealand Food Authority (ANZFA). However, under the terms of the treaty with New Zealand on joint food standards, issues of food safety were specifically excluded, and New Zealand and Australia continue to have separate food safety systems. (Roche, 2002)

The Australian food safety system is based on a mix of regulatory approaches and mandatory requirements with voluntary prescriptive guidelines. Such a system can accommodate the specific requirements of a spectrum of food related businesses. Classifying food businesses by relative levels of risk also ensured resources were effectively allocated.

To achieve maximum prevention it is essential that safety should be built into food products from production through to consumption. In recent years, countries such as Australia have changed the structure of organizations and their philosophy of control to a more systematic application of risk analysis and use of HACCP principles. Strict co-operation is necessary between various stakeholders in the development and implementation of safe food production measures, particularly between industry and public authorities.

Australia has a clear separation in the different responsibilities that are part of the food regulatory system. Setting of standards is the responsibility of FSANZ (Food Standards Australia New Zealand), policies are developed by a Ministerial Council comprised of health and agriculture ministers from each Australian state and territory and New Zealand, while enforcement is the responsibility of the different States and territories.

In Australia, FSANZ develops food standards for the entire food supply chain, from primary production through to manufactured food and retail outlets. These standards are included in the Food Standards Code. Standards development is based:

- Evidence based
- Based on risk analysis – risk assessment, risk management and risk communication
- Consultative
- Economic and Social Analysis
- International

Public-private partnerships are very common in the food sector in Australia. One example is SAFEMEAT. This is a national system implemented in Australia involving a strong partnership between industry and the federal and regional governments. To date, SAFEMEAT has implemented a national livestock identification scheme to ensure domestic consumer information and international markets requirements on meat products. SAFEMEAT also initiates research and development projects particularly in relation to microbiology and food-borne pathogens. It also develops communication linkages and monitors the status of meat products and their conformity to appropriate standards.

The ANZFA experience showed that:

- Creating a single, uniform and simpler system of food safety laws takes time. (It took six years to get the least controversial elements introduced. The future of mandatory HACCP food safety programs is still uncertain.);
- Lengthy, exhaustive consultations with stakeholders are essential;
- Anticipate resistance from small businesses to the introduction of mandatory food safety programs;
- The basis for food safety regulation is hampered by the low amount of high-quality data -specifically, on the method and pattern of transmission of food-borne pathogens to humans and the extent and cost of food-borne illness.

(Roche, 2002)

China

In the recent two decades, the overall food safety has been greatly improved. Many large food enterprises have applied advanced food safety control measures, such as GMP, HACCP and laboratory control. Small and middle size enterprises have also taken necessary measures to improve the food hygiene condition of food manufacturing and handling. Even the wide spread traditional food business, street food, is making some progress in food hygiene. These achievements are the result of capacity building in government agencies and industries, including technical assistance from international organizations.

In recent years the Chinese Ministry of Health implemented two pilot programmes on improving the safety of street food in cities by the application of HACCP principles. One project was funded by FAO, the other one by WHO. The implementation of these programmes combined the advanced measures of food safety control with Chinese traditional control methods and proved to be very effective in improving the hygiene status of street foods.

The project included a variety of activities, such as:

- Carry out special studies on high risk foods, such as the application of HACCP in cooked meat business.
- Identification of critical control points (CCPs) for the manufacturing process of each high-risk food. For example, the process of live chicken purchasing, salting, roasting, cooling and cutting were identified as CCPs for the manufacturing of roasted chicken. It not only significantly reduced the level of microbiological contamination, but also improved the taste of the product.

- The establishment of self-inspection and control system by street food vendors.
- The improvement of environment and facilities – assign special sites for vendors, provide water, electricity and gas, etc.
- Training on food safety and HACCP of food vendors and food handlers.
- Establish central heated sterilization station.

The street food program conducted in China is in line with the plan of hygiene city and hygiene town in China, which is an important prerequisite for the success of these programs

More generally, China has made the following achievements in food safety:

- ***Better enhancement of food safety standards***

  Under the unified supervision by the National Standardization Committee cooperated with relevant departments in hygiene, agriculture and quality inspection sectors, a framework food safety standard system has been established involving national standards, industry standards, local standards and enterprise standards. Up to late 2002, the food national standards and industrial standards have accounted to more than 3000 items and nearly 4000 items respectively involving food processing and agro-food product standards, food industrial standards, food inspection method standards, food hygiene standards, food packaging material standards and container standards etc.

  Taken the importance of standards system, MOA and the Ministry of Finance have jointly implemented a program for the constitute and revision of industry standards of agriculture since 1999, which supported the constitution and revision of quality and safety standards for 350 kinds of harm-free Agro-Products with special funds 30 million Yuan each year. MoST has carried out the research on the technical standards of food safety "from farm to table" in China, together with MOH, MOA, AQSIQ, etc.

- ***Formation of food safety monitoring system framework***

  Food safety inspection and monitoring agencies in China are distributed in various departments of the MOH, MOA, AQSIQ and so on.

  MOH has established and gradually developed the National Food Safety Monitoring System, namely, the Food Contaminants Monitoring System

(focusing on chemical pollutants) and the Food-borne Disease Monitoring System (focusing on biological pollution and food poisoning).

Up to late 2005, MOA has established 280 national and ministerial agro-food quality monitoring, inspection and quarantine centres, and has helped more than one third of county cities to establish quality and safety inspection stations of agricultural products with emphasis on rapid inspection. By unremitting efforts, agricultural departments have set up prevention and quarantine system for animal and plants from central government level to country level, which have been playing a very important role. The inspection is targeted at agricultural environment, agricultural inputs, agricultural products, and etc. The system is capable of inspection the whole process from the production of agricultural inputs and the environment of agricultural production areas to the production and consumption of agricultural products.

AQSIQ has basically formed mature system for food safety testing and inspection and have established more than 2,500 technological institutions for food and agricultural product inspection across the country. MOC have established market inspection system. Large-scale wholesale markets of agricultural products and sideline products have been equipped with the equipments for hygiene and quality inspection and technical personnel. Retail markets with an inspection service are on the increase.

- ***Control of market access***

  Based on the principle of separate administration of food safety, the AQSIQ has been carrying out market access control on all food for sale in accordance with relevant regulations since 2003. Production capacity and quality assurance of food producing premise are to be assessed based on the relevant laws. One who meets the requirement will get production permission. Meanwhile, compulsory inspections are required to all products and only qualified ones can get market access permission with a QS label. According to national standards regulation, there are 28 major categories of products and over 500 processed foods. Up to July, 2006, there are 15 major categories and 370 processed foods receiving market access control.

  Taking vegetables and livestock products as emphasis, MOA has made progress in the whole process traceability for agro-product quality & safety and market access control through establishing production and selling interactive mechanism, carrying out agro-product labelling management, setting up special selling zone for safe agro-product and implementing consecutive logistic service. In the Law on Quality and Safety of Agricultural

Products newly promulgated in 2006, five categories of agro-products are banned to enter the market.

- ***Establishment of response mechanism for major food safety issues***
  Since the outbreak of SARS in May 2003, the State Council has given high priority to the establishment of rapid action plan and response mechanism toward the emergencies of public health and formulated relevant regulations. In 2006, the Office of the State Council issued several important action plans for dealing with major food safety accidents. A task-force will be set up in the SFDA in case of food safety accidents occurrence to lead and coordinate the response action.

- ***Improvement of the food safety information transparency***
  With the occurrence of food safety accidents, consumers and all the interested stakeholders are become more and more concerned and requesting further information on the food safety. In 2004, eight relevant ministries including the SFDA, MOH, MOC, the Ministry of Public Security, etc. jointly promulgated a measure on Food Safety Surveillance Information Publishing to make sure that every local food and drug administration takes the responsibilities to ensure the scientific and smooth publication of the information. In the Law on Quality and Safety of Agricultural Products, the MOA is authorized to publish information in terms of agro-product quality and safety, monitoring information and agro-product quality and safety issues. Besides, plenty of work has been done by governments at provincial levels to secure the public health and facilitate the development of food industry.

The Chinese government is convinced that enabling the consumers, food industry and other stakeholders to learn about the current situation of food safety and to participate in food safety control activities is the most efficient way of strengthening the national food safety control system and of improving the confidence of consumers in the safety of the food supply. Based on this understanding, the Chinese government has adopted various measures to promote the participation of all stakeholders, in particular the consumers. These may include:

- Participation of food industry associations and representatives in food standard and regulation drafting;

- Increasing attention by governmental agencies at different levels to consumer complaints and responding to communications with industry in respect of these complaints;
- Disseminate food safety information through the media and implementing the annual education programme "Food Hygiene Law Education Week";
- Establishing close cooperation with the consumer organizations.

The participation of Chinese consumers in food safety control is still relatively inadequate, particularly regarding consumers from rural areas. Most of the food industries in China are small and medium sized businesses, there being a need to explore better ways to communicate with these food industries. China is a large and diverse country, with significant differences in economic development, education levels, cultural background and dietary habits amongst its different regions and consequently requires an efficient ways in establishing participation and risk communication towards food safety.

Japan

Food safety regulation is carried out based on the Food Sanitation Law. This law was enacted in 1947 and revised several times during later years. The law authorizes the Ministry of Health, Labour and Welfare (MHLW) to take legal action and to establish necessary standards and specifications, as needed, without revising the law itself. MHLW and the Ministry of Agriculture, Forestry and Fisheries (MAFF) share responsibility for the provision of safe food at the central level. MAFF is responsible for food production and quality assurance, while MHLW is responsible for stable food distribution and food safety. MHLW and local authorities implement food safety regulations at local level. (Ushio, 2003)

Since 1998, Japan uses a comprehensive sanitary control system based on the HACCP system and a farm-to-table approach. In the system, manufactures or processors establish manufacturing or processing methods of the target foods and sanitary-control methods, based on the HACCP system. Then, the MHLW confirms whether these established methods comply with the approval standards. The manufacturing or processing methods approved under the system are considered to meet the standards for manufacturing or processing under the law. This means that the system enables the application of a wide variety of methods to food production without following uniform standards. (Ushio, 2003)

However, despite the successes of the current system MHLW realises that food safety continues to be a challenge. As a result, further improvements of hygiene levels, public education, and coordination of epidemiological and laboratory investigations are required. (Ushio, 2003)

Thailand

Prior to 2004, Thailand's food safety regulations involved four governmental agencies (Ministry of Public health, Ministry of Commerce, Ministry of Industry and Ministry of Agriculture and Cooperatives). Consequently, administrative proceedings on food safety were perceived as rather confused and repetitive at both policy management and operation level. To reach the commitment of food safety, the review of food regulation system was initiated in 2001. Thailand has reconstructed the public sector into an integrated agency. By this, the Ministry of Public Health is in charge of imported agricultural and food commodities with an exception on shrimp, tuna and meat products imported as raw material. Alternatively, the Ministry of Agriculture and Cooperatives (MoAC) is responsible for exported agricultural and food commodities covering resources, manufacturing process through finished goods that are to be exported.

In 2002 the National Bureau of Agricultural Commodity and Food Standards (ACFS) was established under supervision of MoAC to act as the centre for maintaining food safety and focal point in certifying the standards for agricultural and food commodities for exports.

According to the National Agenda through the cabinet resolution of 4 March 2003, the Road Map of food safety was established to be the strategy of the country to achieve the goal to clearly identify each relevant agency of duties and premises to food safety, especially the two most important agencies: Ministry of Public Health and MoAC.

The Road Map of Food Safety consists of five main strategies: (I) import input control, (II) development of farm and manufacturing standards, (III) develop and certify manufacturing, (IV) inspection and certification of export commodities, and (V) negotiation on technical problem-solving. Traceability is another important measure for the effective functioning of the competent authorities. Prompt action is very important when a food safety issue arises.

Agricultural commodity and food standards are used as references for manufacturing, trade, export, import and certification. They are rather done on voluntary than compulsory basis because people themselves see the benefits

of harmonization and developing their production standards to international acceptance. These standards are based on the following principles:

- Based on scientific evidence to assure the quality and safety of food supply
- Food Safety aspects of the standard should be based on risk assessment
- Harmonize with international standards as appropriate
- Transparency

Commodity standards are set as national references for production, domestic and international trade, and guarantees of products. These standards cover both safety and qualifications of products that consumers need or minimum qualification of basic agriculture commodities such as those of jasmine rice, durian, mangoes, etc.

System standards are designed to be the criteria to assess and certify manufacturer's practices from farm to packinghouse or factories including primary processors such as abattoirs and millers. Among these standards are GMP and GHP (Good Hygiene Practice). Such standards can be used as benchmarks for the people involved such as farmers, distributors or factories so that they can be assured that they will get agricultural commodities or food that are safe and in accordance with the all standards.

General safety standards are specifically designed for food safety and sanitation of animals and plants, which are imposed on agriculture commodities and all kinds of food, for example MRLs for pesticides.

For *manufacturing*, farmers, manufacturers and exporters can use these standards as benchmarks to improve quality of their production and products, which will help grading their goods in accordance with the national and international levels.

For *trade*, standardizations of products for their quality, size or taste will help create benchmarks for both buyers and sellers, which will also help establish fair trade for both sides. In the past, general standards did not exist and different buyers had different specifications. ACFS has set a target to issue standards for the whole agricultural food chain. For example, the standardization of jasmine rice will start from characteristics of paddy, unhusked rice and white rice. This chain involves everyone from farmers, millers, traders, packaging factories, and exporters. The standard of jasmine rice will cover both elements of product quality and its safety for consumers.

ACFS also issued a Good Agriculture Practice for Thai jasmine rice that falls under the concept of standardization covering from farm to table.

Standards are also used for *certification*. According to the food safety strategy of the MoAC, the target is to *register and certify* farms in the areas of crop production, fisheries and livestock to standardize their practice by using GAP as evaluation tool. ACFS is obliged to set the standards of GAP in fields that farmers need and go along with plans of action for certification by specialised agencies in the Ministry.

Finally, standards are used to facilitate *international trade negotiations*, especially for equivalence agreements between Thailand and its trading partners. Most of these countries will require Thailand to have the same standards as theirs. Such requirements are not a problem to Thailand because the ACFS standards are consistent with international standards set by Codex, IPPC or OIE. In addition, Thailand also proposed some standards for Codex to issue as international practices.

The certification body certifies from farm level (GAP) to factory production (GMP, HACCP). Successful certification is expressed by the national "Q mark", which ensures both domestic and international consumers of the certified quality and safety of a Thai product.

United States

Protecting the public's health is the primary basis for food safety activities, including those addressing capacity building and technical assistance. The United States uses the information generated from food safety risk assessments to evaluate options and select strategies for managing identified risks. Risk management strategies often include new regulatory requirements, but also can include or consist of non-regulatory actions, such as voluntary efforts on the part of industry or consumer education initiatives. The USA encourages and facilitates consumer and stakeholder participation in the development of risk management strategies. Further, in the development of new regulations, consumer and stakeholder participation is guaranteed by U.S. law. Food safety risks are communicated to the public though a variety of means, including public meetings, publications in the *Federal Register*, mailings to consumers and other stakeholders, and the Internet.

Risk analysis is a three-part process consisting of risk assessment, risk management, and risk communication. The information generated from food

safety risk assessments is used to evaluate available strategies for managing identified risks. The costs, social impacts, and legal parameters of each possible risk management strategy are also considered. Risk management strategies often include new regulatory requirements, but also can include or consist of non-regulatory actions, such as voluntary efforts on the part of industry or consumer education initiatives.

Consumer and stakeholder participation in the development of risk management strategies are both encouraged and facilitated throughout the risk management process. Effective communication requires that all interested parties have equal access to information and ability to influence the process. Efforts must be made to ensure that the process is fair and will engender trust.

The audiences identified for participation and risk communication may include the general public, scientists, the media, consumer and industry representatives, public health professionals and regulators. Audiences also may include general consumers and organizations who speak for those consumers at higher risk for food-borne illness, such as the elderly, pregnant women, young children, and people with weakened immune systems.

Food safety regulatory agencies use various channels for this participation and information exchange such as public meetings, publications, formal and informal working meetings and the Internet. When new regulations are developed as a part of risk management, U.S. law mandates consumer and stakeholder participation in rulemaking.

Under the Administrative Procedures Act, Federal agencies are required to make available to the public for review substantive rules of general applicability adopted as authorized by law, and statements of general policy or interpretations of general applicability formulated and adopted by the agency. The Act also requires Agencies to publish these rules and statements in the *Federal Register* and "to give interested persons an opportunity to participate in the rule making through submission of written data, views, or arguments with or without opportunity for oral presentation".

Tasks related to risk assessment and risk management activities should be performed in a coordinated manner by different people or functional groups, and ideally persons who perform the risk assessment should not also be responsible for making risk management decisions. Separation of responsibility helps to maintain the scientific integrity of the process and to avoid political pressures that would undermine the objectivity and the credibility of the

conclusions. Furthermore, separation of activities helps to ensure that risk assessments are not biased by pre-conceived opinions related to management solutions. At the same time, there is a need for frequent interaction between risk managers and risk assessors to ensure that the assessment will meet the needs and answer the concerns of the risk manager; acknowledge any constraints that may impact on the risk assessment, and to assure that managers fully understand the results.

For more information on the current status of food safety in APEC member economies, please see the Annexes (Papers from the APEC Regional Workshop on Food Safety, held in Ha Noi from 9 – 10 October 2006).

3.2 FOOD SAFETY IN VIET NAM

3.2.1 Role of Viet Nam's agricultural sector in the national economy

In the last 20 years, Viet Nam has seen major economic reforms. The *Doi Moi* (reforms) starting in 1986 has seen a gradual shift from a centrally-planned economy to a more market-oriented economy. This has resulted in a shift from import substitution to a strong focus on exports. The agricultural sector has been a key area of these reforms. The shift from away from collectivisation to private farming enterprises has led to a revitalisation of the sector and has resulted in increased market opportunities for Viet Namese agricultural products.

Although the importance of agriculture to the national economy has decreased (from 27% of total GDP in 1995 to 21% in 2005), the sector is still the largest single contributor to the national economy in Viet Nam, providing the livelihood for an agricultural population of 54 million, a number still exceeding by far the rapidly growing non-agriculture population of 28 million (World Bank, 2006). Improvements in production/processing practices and product quality are pivotal to meeting Viet Nam's socio-economic development objectives both in terms of strategies for continued export growth as well as to enhance the sector's contribution to the national economy. Increased returns from higher quality agriculture and food products will have an impact on incomes in rural areas.

The last decade saw strong growth in agriculture, including forestry and fisheries, by both regional and international standards: the average annual growth was 4.4% from 1996 to 2000 and 3.6% from 2001 to 2005. Past growth has been fuelled by exports. Large shares of Viet Nam's main agricultural

products are exported, including rice (20%), fisheries (20%), coffee (95%), cashew nuts (90%), pepper (98%), and tea (75%). On average, agricultural exports grew 14.6% per annum, accounting for 27% of Viet Nam's total export in 2005.

The intensification of production of the agricultural sector has, however, also resulted in a number of problems. In crop production, pesticide use has increased considerably, while in the livestock sector, the use of feed additives and antibiotics has grown. These problems, coupled with a general low level of hygiene in processing and food retailing, have resulted in food safety problems both domestically and in major export markets as well as in direct limitations in market access, particularly to high-value markets, such as Europe, Japan and the USA. Besides these problems, a number of Viet Namese commodities suffer from a lack of competitiveness or have other problems complying with the quality and sanitary and phytosanitary standards at the international markets.

3.2.2 A changing domestic market

In terms of the retail sector, Viet Nam’s retail sales are at a record high, 250 trillion VND (US$ 1.6 billion) in the period January-November 2003 or a 12.6% increase as against the 9.1% and 8.5% percent in 2002 and 2001, respectively. Sales of foods and foodstuff likewise increased by 11% while the non-food sector by 12.8 percent for the same period.

The changes in the demographic and socio-economics performance have contributed to the increase in food intakes. Domestic food market grew strongly, from US$3.4 billion in 1992-1993 up to US$7.2 billion in 2002 (FAOSTAT, 2001). The urban population was only 25% of the national total but it accounted for 40% share of the food market value in 2002. The country’s consumption of all main products except tubers, increased with milk topping the list registering an increase from 1.3 kg per capita consumption per year in 1987 to 9.1 kg in 2000 (Paul et al, 2003).

Quality and (phyto-)sanitary issues therefore are not only a problem in relation to export. It should be noted that the growth in fruit, vegetables, and meat during the last 10 years was almost entirely driven by domestic demand. Increased domestic income has led to increased demand, while changes in the demand pattern have resulted in an increased demand for high-quality products, both from domestic production as from imports (for example, dairy products).

Since the start of the *Doi Moi* reforms, national food consumption (in constant 1997 US dollars) has more than doubled, increasing from US$6.1 billion in 1988 to US$13.6 billion in 2004. Food security has been assured at the national level. While the diet for most of the Viet Namese people is still largely rice, fish, and vegetables, as income increases, so does the consumption of fruit, vegetables, and animal-based products. Cereal consumption has also diversified from rice to include other staples, such as wheat and maize. In 2003, a Viet Namese household spent, on average, as much as 65% of its total expenditure on food, with a strong increase from 1988 levels in consumption of seafood, pork, poultry meat, and vegetables. The middle- to high-end consumers increasingly demand better quality and safer food. Although the consumption of safe food is still small because of its 30 to 50% higher cost, an increase in consumption of such foods is likely in the future, given the trends in other countries in the region.

3.2.3 Changing export markets

Before the late 1980s, most of Viet Nam's agricultural exports went to Eastern Europe, with the Soviet Union being Viet Nam's main trading partner. Since the collapse of the Council for Mutual Economic Assistance (Comecon) block, Russia's trade with Viet Nam dramatically declined, from 21%in 1996 to 4% in 2002. In the initial years after the collapse of Comecon (1990), exports revolved around the repayment of Viet Nam's debt to its former allies with monetary settlements rather than with the "in-kind" trade used prior to 1990. Moreover, many industries that had been guaranteed a market became less competitive than were those that were already competing in the world market.

Since the nineties, the fruit and vegetable export sector has recovered to some extent through the opening up of new markets in Southeast Asia and elsewhere and through investments in new technology for processing facilities that meet HACCP and EurepGAP standards and thus the food safety standards of many high-income countries. Exports to China have also been stimulated by the short distance but also by the lower quality and sanitary requirements of Chinese consumers and traders. Export of perishable foods to the United States, Oceania, and the European Union is hampered by SPS and by general quality constraints.

Recent export trends confirm the economic potential for Viet Nam of exporting high-value agricultural goods to high-income countries. By 2003, agricultural exports expanded to US$3.7 billion, a 78% increase from 1997. The most

important agriculture and food exports in terms of value are fish and crustaceans, coffee, fruits and nuts, vegetables, pepper, and cereals. Viet Nam has been particularly successful in capturing significant parts of the world market with a product of average quality in rice and coffee, but, except in fish, it has failed to capture the high-end of the market.

Several positive factors, such as favourable climate, low labour costs, and double cropping seasons, could result in a further increase in the export of non-traditional commodities to high-income countries, and Viet Nam could also become competitive in tropical fruits. Much of the growth in exports will depend on Viet Nam's ability to offer a reliable supply of safe products.

The APEC economies are very important economic partners for Viet Nam, both for export as well as import. Facilitating trade within APEC is therefore of utmost importance for Viet Nam, including resolving issues related to food safety and the streamlining of food safety regulations. Some data will illustrate the importance of Viet Nam's trade with APEC.

Total export turn-over of Viet Nam to APEC:

- 2000: US$10.1 billion (making up 69.7% of the total export value)
- 2003: US$14.7 billion (72.8%)
- 2004: around US$15.5 billion (58.5%)
- Among the seven economies with more than US$1 billion of imports from Viet Nam are five APEC economies (USA, Japan, China, Australia and Singapore).

Around 80% of Viet Nam's imports come from other APEC economies:

- 2000: US$13 billion (79.4% of the total import value)
- 2003: US$20.3 billion (79.2%)
- 2004: US$25.3 billion (79.2%)
- The APEC economies from which Viet Nam imports more than US$1 billion include China, Singapore, Japan, Korea, Chinese Taipei, Thailand, and the USA.

3.2.4 Areas of concern in relation to food safety

With continuing growth of domestic and export markets as well as increasing food imports, food safety and quality issues therefore are a high priority in Viet

Nam. Viet Nam has already made great efforts in improving its regulatory framework, but in several areas still more needs to be done.

Over the last decade, Viet Nam made exceptional inroads into specific international commodity markets albeit Viet Nam's entry unto those markets was at the low price/low quality end of the markets. The country became a dominating force in world markets for rice, coffee, tea, cashew nuts, pepper, and shrimp. Present market circumstances, however, require adjustments in the Viet Namese strategy. Market saturation and lack of profitability for lower quality/commodity type products are now providing strong incentives for Viet Nam to move up-market (e.g. from Robusta to Arabica coffee) and improve quality (emphasizing higher grades) in order to maintain returns from these export activities. Moreover, Viet Nam is now facing stiffer competition as well as higher market access conditions from trading partners. Expert market requirements and standards linked to food safety/plant sanitation, residue levels and fair trade practices are presenting limitations that Viet Nam must overcome. In response, Viet Nam must upgrade product quality to meet these requirements and to maintain gains already garnered in international markets.

Furthermore, Viet Nam faces the requirement to comply with the SPS Agreement from the date of its accession to WTO and must effectively implement a number of other SPS related international agreements as well. Furthermore, the opening of trade over the next two years in compliance with WTO accession and the ASEAN Free Trade Area (AFTA) Agreement will present Viet Nam’s domestic producers with a major challenge in competing with producers from elsewhere on food quality and safety (World Bank, 2006).

While significant progress has been made in some sectors, particularly in the fisheries export sector, additional action is required to strengthen Viet Nam's capacity to manage food safety and agricultural health. Key interrelated reasons include the followings (from World Bank, 2006):

Public health

- *High levels of food-borne pathogens*, with poor water quality and deficient production, processing, marketing, and retailing technologies, in particular of meat and vegetable products, causing high levels of food-borne diseases. Surveys of meat for domestic consumption show one-third of all samples positive for salmonella, with particularly high figures for pork (77% positive). A recent survey showed 1.5 cases of diarrhoea per person per

year, one-fifth of which require medical attention, compared with 0.3 case of diarrhoea per person per year in developed countries;

- *High levels of toxic residues*, with food additives, pesticides, and antibiotics surpassing the maximum residue levels (MRLs) allowed in domestic or international markets. National data are not available, but anecdotal evidence from surveys undertaken in the Hanoi and Ho Chi Minh City markets shows that about 10% of vegetable samples exceed national standards for pesticide residue levels. No quantitative information is available on the use of antibiotics in meat and fish products, but it is reportedly also a major problem.

Agricultural health

- *Plant pests,* with recent introductions of alien pests due to weak border protection causing major economic losses in commodities such as the cocoa nut, rice, sugar cane, and fruit;
- *Animal diseases,* with diseases such as Foot and Mouth Disease (FMD), Classical Swine Fever (CSF), and avian influenza causing major losses to domestic production.

Reduced international and national markets access

- *Missed trade opportunities,* because the prevalence of fruit fly throughout the country prevents the export of practically all untreated fruits to Australia, Japan, New Zealand, and the United States, while FMD, CSF and avian influenza preclude export of most meat products to almost all potential markets;
- *Increasing consumer demands for safer products in both the international and domestic market.* Moreover, the imminent entry of Viet Nam into the World Trade Organization (WTO) and market liberalization under ASEAN will require the country to further reduce tariffs and export subsidies and to open its markets to producers from other countries. As a result, local producers will face increasing competition from the global marketplace and will need to increase the quality and safety of their products in a cost-efficient way to compete.

WTO requirements

- Compliance with the SPS Agreement required for WTO accession remains a serious challenge. Viet Nam has committed itself to comply fully with the SPS requirements immediately after its accession, but the country's existing

implementation capacity is still limited. While the National Enquiry Point and Notification Authority have been established, there still exist important differences between national and international standards for at least half of the regulations in major areas of food safety and agricultural health.

The Viet Namese Government has made a strong commitment to meeting the requirements of the SPS agreement, and although major progress has been made, more still needs to be done. This is summarized below for the main components of the SPS Agreement (MARD, 2004):

- **Transparency.** The National Enquiry Point and Notification Authority, located in the International Cooperation Department of MARD, was established and is the sole formal SPS-related requirement for WTO accession.

- **Harmonization,** or "the need to base Viet Nam's sanitary or phytosanitary measures on international standards," has been partially achieved. The Ministry of Health reports that about 48% of the national health standards comply with the Codex standards. In plant health, Viet Nam has adopted three of the 24 International Standards for Phytosanitary Measures (ISPM) and has nine pending and six planned. Finally, in animal health, quantitative information on gaps is less easily defined, but major ones do exist. The main strategic and policy decision concerns the rate of adoption of the international standards for the domestic market. The so-called "Golden Standards" of Codex, IPPC, and OIE, while science-based, would be difficult to enforce at the national level. Their adoption would increase the cost of food (by at least 5 - 30%) and, as they are based on Western food preparation habits, do not always appropriately address the risk involved in food preparation habits in Viet Nam. The option, therefore, would be to aim for a gradual transition to the "golden" standards. This would mean that, for the short and medium term, national standards would not necessarily be based on the international standards of Codex, but would take account of local food preparation habits and the enforceability of these standards.

- **Equivalence,** or the need to "recognize the sanitary or phytosanitary measures of other Members as equivalent" is mainly of direct importance under bilateral trade agreements and should be pursued only for major import and export products. However, Viet Nam lacks the technical capacity for inspection, testing and verification of equivalency of phytosanitary measures. Besides, poor infrastructure prevents from achieving levels of phytosanitary protection of other countries.

- **Risk Analysis** is probably the most challenging SPS regulation. To implement risk analysis, human skills for conducting the economic and probability analyses must be developed but, even more importantly, the time series of data must be collected and adequate databases established.

- **Control, Inspection, and Approval Procedures,** or the need to harmonize certification documentation, is also an area requiring substantial additional attention.

3.2.5 Food safety management and management systems

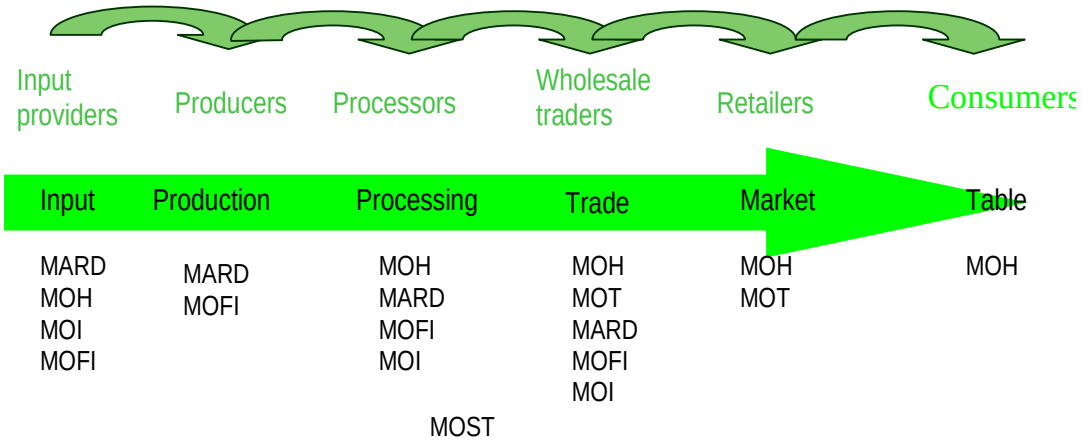
Agricultural development remains a major component of Viet Nam's goals for economic growth and poverty reduction. In particular, high-value products, such as fruit, vegetables, nuts, and animal products can play an important role in this respect if the quality, food safety and agricultural health requirements of the more demanding markets are met. Addressing these sanitary and phytosanitary problems would reduce major losses to the national economy and contribute to rural poverty reduction. (World Bank, 2006)

Food safety has traditionally focused on enforcement mechanisms to remove unsafe food from the market after the fact, instead of a more pronounced mandate for the prevention of food safety problems. Generally, the orientation of many food safety systems tends to be reactive and defined by enforcement criteria instead of preventive and holistic in the approach to risk assessment and reduction. (FAO, 2003) Ensuring that the end product has been adequately disinfected and is, therefore, safe is not enough anymore; consumers want to be sure that the food they buy is safe and that the risk of contamination with pathogens is minimal. Risk analysis is necessary to provide these assurances on a sound basis. Integrated supply chains, integrated safeguarding systems, and risk analysis are therefore cornerstones of a modem food safety and agricultural health management system. (World Bank, 2006)

Food safety management in Viet Nam

Six Ministries share the responsibility for food safety in Viet Nam. Figure 1 summarizes the responsibilities of the different Ministries along the food chain.

Figure 1. Food safety responsibility: Position of Ministries along the Food Chain



Source: World Bank, 2006

Clarification of roles, communications between Ministries, and coordination of effective use of laboratory capacity are challenges to a comprehensive food safety action plan based on a total farm-to-table effort. Viet Nam has an adequate legislative and organizational infrastructure in place for carrying out pesticide regulatory responsibilities, but at the field level, little coordination takes place between the institutions involved in production. Infrastructure and equipment, for example, for quarantine, laboratory, and other surveillance operations, is often similar and staff skill requirements are often identical. Significant economies of scale can thus be achieved if functional responsibilities are merged in single institutions. (World Bank, 2006)

There is sometimes also a lack of coordination between animal and human health organizations As shown by the recent outbreak of Avian Influenza and SARS in the region, normally, the veterinary services tend to focus on animal-to-animal disease transmission and the health departments on human-to-human transmission; this leaves a gap in the surveillance and control of the animal-to-human transmission. (World Bank, 2006)

Meeting Viet Nam's food safety and agricultural health objectives will depend to a large degree on strengthening the cooperation among fragmented smallholders and between producers and actors further down the supply chain.

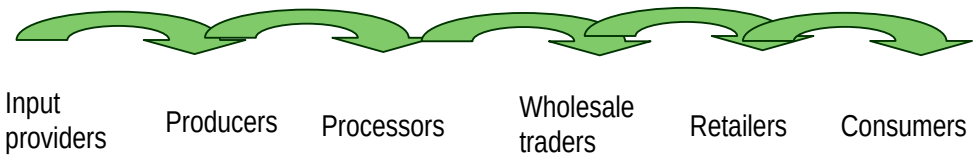
Producer cooperatives exist but these formal cooperatives lack farmers' genuine interest and could therefore play only a limited role in food safety and quality improvement in the supply chain. However, a large number of informal cooperative producer groups exist in various forms (e.g., water users' groups, credit groups, IPM clubs), bringing the proportion of farmers participating in some form of cooperation to 40 - 50% in some provinces. (World Bank, 2006) Farmers themselves form the informal cooperative groups on the basis of genuine voluntarism and common interest. The cooperative groups may play a role in improving food safety and product quality, but their importance remains uncertain because of their lack of legal status and support from both the government and firms operating in food chain.

Associations of food producers and processors play an increasing role, but they are still in the early stages of development and have yet to become effective partners to the government in terms of policy and standard setting. Increasing roles in the associations should be given to the private sector to develop their more independent and constructive voice in the future.

Food safety and the food chain approach

A food chain is composed of the different stakeholders (Figure 2) - from providers of inputs (fertilizers, feed, pesticides and agricultural and veterinary services) to consumers - which are durably linked by processes of producing, moving, and transforming food as well as by the associated generation of the value-added A sustainable food chain is driven by consumer demand and characterized by effective coordination, high competitiveness, constant innovation and fair benefit sharing to maintain participants' incentives.

Figure 2. Definition of the food chain



Source: World Bank, 2006

More and more, a food chain approach to food safety is being developed and implemented. (The so-called "**Farm-to-Table**" approach to food safety.) Stakeholders include farmers, fishermen, slaughterhouse operators, food processors, transport operators, distributors (wholesale and retail) and consumers, as well as governments obliged to protect public health. The holistic approach to food safety along the food chain differs from previous models in which responsibility for safe food tended to concentrate on the food processing sector. Its implementation requires both an enabling policy and regulatory environment at national and international level with clearly defined rules, and the establishment of food control systems and programmes at national and local levels throughout the food chain. (FAO, 2003)

In many APEC economies, including some in the South-East Asia region, different management systems such as GAP and HACCP have been introduced in agricultural production and processing. In some economies, the use of HACCP has been made mandatory for certain food sectors. However, the introduction of these systems in Viet Nam has been slow and, when implemented, have had limited level of effectiveness (Veena Jha, 2001).

Similarly, EurepGAP was introduced in Viet Nam in 2000 by several foreign projects with the technical assistance from government bodies and a few private companies. One of the industries targeted for EurepGAP was dragon fruit. Success has been limited as can be seen from the case study on dragon fruit in this report.

Development of "safe" and organic food

Viet Nam is developing for certain commodities so-called *"safe"* production requirements, linked with a certification system. So far, however, only regulations for "safe" vegetables production are being implemented. As can be seen from the discussion of the vegetables sector in this report, success has been limited, partly because of problems with the development and implementation of a transparent and trustworthy inspection and certification system.

The trade in *organic* agricultural products is one of the few growth markets within the overall trade in agricultural products. Sales of organic food and drink continue to increase across the globe. In 2003, worldwide sales were estimated to have expanded by 7 to 9% to reach US$25 billion. Much of the growth has been observed in the northern hemisphere, namely North America and

Western Europe. However, production and demand for organic products is also increasing significantly in other parts of the world. (Willer & Yussefi, 2005)

In Asia, the area under organic management is comparatively small, but increasing rapidly. Among the more significant countries producing organic products are China, India and Indonesia as well as Japan. For many countries, no precise figures are available. The total organic area in Asia is now about 736,000 hectares, managed by 66,000 farms. Additionally, 2.9 million hectares are certified as 'wild harvested' areas. (Willer & Yussefi, 2005)

However, the development of organic agriculture in Viet Nam is very limited, even in comparison with direct neighbour countries (Table 1). The Ministry of Agriculture and Rural Development (MARD) does not have specific policies to develop and promote organic farming and, as a result, organic agriculture in Viet Nam has mostly remained an initiative by the private sector. In the absence of domestic certification bodies, all organic products in Viet Nam are certified by foreign certification agencies

Table 1. Certified organic area (in hectares) for several APEC economies

Economies	Thailand	Viet Nam	China	United States	Japan
2002	3,429	--	301,295	950,000	5,083
2003	3,993	6,475	301,295	950,000	5,083
2004	13,900	6,475	298,990	930,810	29,151
2005	13,900	6,475	3,466,570	889,048	29,151

Source: Willer & Yussefi, 2003, 2004, 2005 and 2006

3.2.6 Analysis per commodity

The following describes the relative importance of each of the selected commodities with regards to import, export, domestic market and food safety (FS) risk:

Commodity	Import	Export	Domestic	FS Risk
Fruits	+	+	+	++
Vegetables	+	+	++	++
Tea	0	++	++	+
Cashew	+	++	+	+
Milk	++	0	+	++

++: important+: less important 0: not very important

Fruits and vegetables

Viet Nam grows a wide range of vegetables and tropical and subtropical fruits and both the production area and the productivity has grown considerably over the last years. Domestic demand for fruits and vegetables, particularly fresh, is considerable, while export is also important.

With the collapse of the Soviet Union, the Viet Namese markets for fruits and vegetables virtually disappeared, and the new markets sought by Viet Namese exporters had higher quality and food safety standards. The country has been reasonably successful in this search, and new markets have been established in other parts of Asia and in the United States, Europe, and Canada. The trend in these exports is toward higher-valued and more diversified fruit and vegetable exports, as shown by the unit value, which increased from US$323 per ton in the eighties to US$687 per ton in the nineties, stabilizing at around US$631 in the period 2000 - 2003. (World Bank, 2006)

Although production has been able to satisfy the increase in domestic demand in terms of quantity, the response is still limited with regard to quality and regularity of supply. The most controversial dilemma of the fruit industry in Viet Nam is that large volumes of acceptable fruit for exporting or processing is rarely available due to low and inconsistent quality – especially in the peak harvest season when farmers are in negotiation with traders and wholesalers for their best produce. Compliance with regional and international quality and sanitary and phytosanitary standards is perhaps the greatest obstacle to Viet Namese fruit and vegetable exports to middle- and high-income countries. Export of fresh fruits is now limited to just around 1.3% of total national production. Viet Nam's primary fruit export products are canned pineapple, fresh and frozen dragon fruits, dried longan and litchi. These products are exported to a total of 50 countries, but in very small quantities. According to many experts, Viet Nam has a comparative advantage for the production and export of fresh tropical fruits, such as dragon fruit, rambutan, litchi, and mangosteen, provided that a number of key logistical factors (such as transport, marketing and infrastructure and cool storage) as well as the management of pest such as fruit fly can be overcome. At the moment, Viet Nam can not compete with Thailand in the export of fruits, particularly mango and durian, because of the general poor fruit quality and lack of uniformity. In September 1999, MARD implemented a new program for the development of vegetables, fruits and flowers for the period of 1999-2010. The objective of this horticultural effort was to increase domestic demand for vegetables (to 8 million

tons), fruits (to 6 million tons), while raising the value of all horticultural exports to US$1 billion by 2010. (World Bank, 2006; Nguyen et al.)

Viet Namese imports of fruit and vegetables are small (US$14 million in 2003) compared to its exports, but they are growing. These imports comprise mostly high quality and temperate type fruits from OECD countries.

The main vegetables exported are cabbage, cucumber, potato, onion, tomato, beans, cauliflower, and chilli (a total of US$41 million in 2003, of which 90% is in processed form), with most going to China because of its lower quality requirements and the logistical advantages.

The processing industry has also attracted an increasing number of investors, both domestic and foreign. However, most of the processing factories currently only operate at around 25% of their designed capacity due to a shortage of fresh fruit. This is partially due to the bad planning when locating processing plants.

Some companies producing dried foods (e.g., Sannam) are ISO and HACCP certified, but in general this kind of certification is still rare in the fruit processing sector.

Among the fresh horticultural products with a high export value, *dragon fruit* is one of the most important. Export of dragon fruit has increased the income of many poor smallholders in rural areas. Several GAP programs have been selected to work on dragon fruit because the fruit is one of the top priority crops in MARD's horticultural development plan for the period 1999 - 2010 and because of its importance for the economy of many smallholder farmers.

Viet Namese dragon fruit is exported to China, Chinese Taipei and Hong Kong (50%), Malaysia (20%), Singapore and Indonesia. In 2004, export to European countries (German, Netherlands, France) accounted for 5 - 10% of the total export revenue of dragon fruit. In the European markets Viet Namese dragon fruit holds a share of some 40%. (Phan et al, 2005) Producers of dragon fruit in Viet Nam have seen prices for their fruit decline in recent years which can be attributed, in part, to their dependence on local and nearby export markets. There are about 10 major dragon fruit exporters in Viet Nam but a significant proportion of the total production is sourced from many small growers. The potential of dragon fruit exports to high value western markets has been seriously constrained since most small farmer production techniques do not comply with international regulatory and food safety requirements. The dragon

fruit sector has clearly suffered from the lack of an appropriate model for the implementation of an internationally acceptable GAP. (Nguyen et al.)

Serious interest in export markets was initiated by some enterprises and farmer groups around 2000, but export potential has been constrained since most small farmer production techniques in Viet Nam do not comply with international sanitary and phytosanitary (SPS) requirements. For that reason, several donors, MARD, and dragon fruit supply chain stakeholders joined forces and implemented a collaborative effort to improve small farmer access to export markets through attainment of group EurepGAP certification. (Nguyen et al.)

At the industry level, GAP or EurepGAP is a new concept. There are a limited number of international organizations, and no local expertise whatsoever, that can provide the specialized training and consulting for such certification. Another challenge at this level is that engaging industry stakeholders in the project activities requires constant effort and patience, as the reward of the cooperation is often not well envisioned by the private sector entities. (Nguyen et al., undated)

But probably the most difficult challenge of all is convincing the farmers to actually change their traditional agricultural practices. The most difficult task has been making farmers adopt record-keeping practices, such as those related to recording the application of fertilizers and crop protection product, inventory, sales, and keeping receipts of input purchases and sales. Changing their awareness on safety and hygiene has also been a long, and difficult process. (Nguyen et al., undated)

Farmers lack market information, which would convince them of the need for "safe" and hygienic production. Additionally, farmers are not well provisioned with information on the status of Viet Nam economy as it integrates with the global economy. They need to be made aware of the importance of WTO accession, and international market requirements for fresh fruit and vegetables, as remote and alien as those concepts may seem. (Nguyen et al., undated)

In Viet Nam, the diffusion of EurepGAP to farmer level needs the involvement and support of relevant state institutes and the local authorities. Their support can be through technical or financial aspects or simply through social recognition, which is especially important to smallholder farmers. The implementation of EurepGAP also requires the cooperation of various actors in the supply chain and trust must be built among these supply chain actors.

Failure to establish a trust with suppliers, a company willing to invest in certification risks to gain no returns from this investment. (Phan et al, 2005)

Litchi is a very special product of the north-eastern region of Viet Nam, with two competing main production areas, Luc Ngan in Bac Giang province and Thanh Ha in Hai Duong province. Litchi production in these areas is considerable, with a large proportion being exported (mainly to China). Both production areas claim to produce the best quality products but have difficulties marketing their products because of a lack in identity (trademark) and consistency in quality. With the assistance of VASI, the Association of Thanh Ha Thieu Litchi Production and Consumption" was formed in 2003. The Association members are now applying a GAP programme develop by VASI. However, the implementation of this programme faces difficulties since the Association is not able to establish a traceability system and also to get a premium price for its products fulfilling the GAP standards. Support from the GTZ SME Development project would hopefully solve these problems. (SMED Programme, 2006)

Grapes are another fruit receiving considerable attention. Ninh Thuan province is famous for grape production. Grapes grown here and in other parts of Viet Nam are predominantly for the domestic market. Export volumes are negligible because of small production volumes and general low quality. Import of grapes is considerable, with Australia being the largest exporter of grapes to Viet Nam (almost 60% of total import into Viet Nam). (SMED, 2005)

In general, local consumers prefer the imported grapes because of their better appearance, taste and lower level of pests and diseases. However, domestic consumers are willing to pay a higher price for Viet Namese safe or high-quality grapes if these grapes are from a reliable source. An important requirement from domestic consumers is therefore having labelled Viet Namese which would reinforce their trust and proof for any dispute. (SMED, 2005)

According to the World Bank (2006), Viet Nam also has a comparative advantage to the production and export of fresh *vegetables*, in particular, baby corn, chilli, and mushrooms. Several key factors, however, affect Viet Nam's competitiveness, such as product quality and post-harvest infrastructure. Another major constraint, also with regards to Viet Nam's SPS obligations, is the general high level of chemical and other toxic residues in vegetables.

The issue of food safety in fruit and vegetables is not only a critical issue for export but also for domestic consumers. The results of samples analysed from vegetable production areas by RIFAV showed that pesticide residues were

higher than recommended levels. The nitrate contents of vegetables are also regularly in excess of standards.

In response to public concern for vegetable safety, MARD launched a "safe vegetables" programme in 1995. This program involved technical support to a number of cooperatives to spread the production of "safe vegetables" with regulations relative to the use of water and inputs, the distribution of the vegetables through specific "safe vegetables shops", and some controls on pesticide residues. In 2000, there were 30 "safe vegetable" shops in Hanoi. The total supply of safe vegetables is around 2,000 tons, which corresponds to approximately 1.5% of the total Hanoi vegetable market.

Although the scale of the "safe vegetables" programme is still small, it is nevertheless possible to draw some conclusions in terms of risk management in the local vegetable supply chains:

- The policy of "safe vegetables" production and distribution spots corresponds to consumer demand and should be further developed.
- The limited number of shops is a limiting factor for consumers to buy safe vegetables.
- Generally, consumers are willing to pay price premiums for safe products.
- There should be an increase in consumers' information relative to safe vegetables: production and marketing procedures, vegetable control procedures, and location of safe vegetable shops.
- For safe vegetables cooperatives, it is possible to obtain a certificate from the government but it is very complicated and time consuming to apply for this certificate. The system is not very transparent with regards to its fee structure and application form and procedures.
- Control by the responsible government agencies on the farmers and traders using these certificates is limited and inspection methods do not cover all major risk areas, for example when within one cooperative both "safe" and conventional vegetables are being produced Audit trails are also not established and there is no control on whether all the vegetables bought and sold by "safe vegetables" shops are truly only from "safe vegetables" producers. The lack of an effective control system leads to consumers' mistrust of whether vegetable sold at "safe vegetables" shops are genuinely "safe".

Tea

In 2004, Viet Nam produced 106,000 tons of tea, of which 80% was for export (mainly black orthodox tea) and the 20% remaining for domestic consumption (mainly green tea). Currently, tea is Viet Nam's sixth largest export commodity, the volume of tea exports has risen ten-fold over the last decade. Viet Nam is also the world's sixth biggest exporter, mainly supplying low quality bulk tea to low-value countries. Tea is currently contributing with more than US$100 million to the national economy and it is estimated that about 400,000 small-farm households cultivate tea. Industry wise, Viet Nam has 600 tea production and trading companies including 234 export enterprises (although the largest 20 have a stake of more than 80% of the market) indicating that the crop holds an notable socio-economic importance.

Tea is of strategic importance for Viet Nam and regulations are in place to support the production of high quality tea. There exist, however, what seems to be a huge gap in time, interest and possibilities between the ambitions of the government reflected in the legislation and the actual situation in the tea sector.

As a whole, the industry is characterized by the wide-scale use of obsolete equipment and outdated machinery. It is estimated that almost two third of the country's 75 largest tea factories are running on equipment dating back to the 1960s and 1970s. There are only a few modern facilities, mostly joint ventures with European, Japanese or Chinese Taipei partners. Most tea factories as well as plantations are located in mountainous, inland areas with poor infrastructure and a lack of adequate transportation facilities. Other structural obstacles for the development of industry include a chronic shortage of capital and a lack of export credit facilities and preferential loan schemes. (den Braber, 2003)

Tea quality in Viet Nam is generally low and therefore has problems accessing many European countries. The price of Viet Namese tea is also low compared with other countries (For, example B graded good quality tea from Viet Nam is paid 1.2 USD per kilo while the same grading from e.g. India is valued 2 USD per kilo). (Andersen, 2006)

Another weak point of the Viet Namese teas is that since there are no national "safe tea" standards and therefore no certification or monitoring systems at the national level, producers applying IPM find it difficult to convince traders and factories that their tea is "safer". Also, because most Viet Namese tea is exported to "easy" markets, such as the Middle East and Russia, where

pesticide regulations are less strict, there is not much incentive to invest in IPM training for producers or for other measures to limit pesticide residues in tea and, in general, improve tea quality. (den Braber, 2003)

As the analysis of the tea value chain in Viet Nam has moved along it has become clear that the entire tea sector is pretty immature and that in order to improve the overall quality and safety of Viet Namese tea first and foremost requires a change in mentality by many actors in the supply chain to apply a more market and quality oriented approach to production. It is therefore important that the government is pushing changes through by forcing companies to follow the technical requirements as set out by MARD. Many actors from farmers to exporter know the importance of improving both the quality and quantity of the output. At the same time they don't have the money or the technical skills to realise such an upgrading. Of particular importance seems to be the lack of knowledge among farmers regarding cultivation techniques for high quality production and especially regarding the use of pesticides. Among processing factories a strong lack of management skills and resources to invest in new machinery is found in a majority of the processing units. (Andersen, 2006)

Andersen (2006) identified the following problems at processor and farmer level:

Processor level:

- Too many processing units do not follow the regulations for processing as issued by the government. This situation has created the imbalance between supply of and demand for green leaves and is further making it difficult to ensure a certain quality standard of the processed output.
- A majority of companies is still not driven by a market oriented management and strategy approach. (Rather, factories tend to follow a volume strategy where the aim is to produce as much tea as possible since in the current situation they are running below their maximum capacity as they can not get the tea supply that they need.)
- There is no systematic organisation of supply resulting in high transaction costs, instability and low quality. (Factories with worker farmers or contract farmers are slightly better off as part of their supply is guaranteed.)
- Processors do not apply strict quality control measures due to lack of skilled labour and technical knowledge concerning tea manufacturing.
- There are no incentives or financial resources to invest backwards in the value chain to ensure high quality supply.

Farmer level:

- Low yield (50% < below potential) due to outdated cultivation techniques, and in some cases also negatively influenced by the fact that many tea plants are old.
- Lack of know-how and financial resources to realise high quality production.
- Low quality of output .
- Low sales price.
- No overview of market opportunities.

Besides the problems related to cultivation and manufacturing issues at the farmer and factory level there is another crucial point that constrains quality management and value creation in the tea supply chain: the lack of organisation among the actors in the supply chain. There is no or little organisation among farmers and also often a lack of organisation of supply between farmers and factories. (Andersen, 2006)

This lack of organisation results in:

- High distribution and transaction cost due to bad organisation and low level of collaboration among actors in the value chain.
- No clear communication between actors closest to the market and suppliers so as to agree on specifications for supply regarding quality and price.
- Farmers having little knowledge of the needs of the market, particularly with regards to product quality. There is often also no incentive for the farmer to produce a better quality product if he is no clear who will buy his tea.

Direct contact with factories could also support knowledge transfer between factories and farmers in terms of suggestions for improvements of the quality of leaves, regarding alternative production protocols and transportation of the leaves from the field to the factory. By engaging in long-term supply relationships, farmers could eventually also benefit from companies' investments in infrastructure and training of farmers to ensure a more efficient supply. Organising farmers also makes it easier to obtain more homogeneous supply since a common production protocol would be followed, not only during cultivation but also post-harvest, for example during storing and transport to the factory. (den Braber, 2003; Andersen, 2006)

Cashew

The main nuts exported from Viet Nam are *cashew* (an average of USD 183 million over the period 2001 - 2003, of which 10% was imported for processing and re-export), mainly to the USA, Australia and the Netherlands, and *coconuts* (US$7 million annual average for 2001 -2003), mostly to China. The Government has set a cashew target for 2010 of harvesting 450,000 tons and processing 100,000 tons, with an export goal of US$400 million. (World Bank, 2006)

The cashew processing industry has undergone a fast development. Up to 1994, Viet Nam did not have enough capacity to process all internally produced cashew nuts to kernel. Around 20% of the raw cashew nuts production was exported to India and other countries for processing. This situation has changed dramatically and as of today, Viet Namese processing facilities exceed the present production and Viet Nam imports by around 50,000 to 100,000 tons of raw cashews for final processing to meet domestic capacities. This change from a nuts-in-shell (NIS) exporter to an importer of NIS was important for Viet Nam to increase value adding of cashew in Viet Nam and to become a direct trading partner to the international cashew buyers rather than only providing semi-processed products. (EDE Consulting, 2006)

Cashew production in Viet Nam is almost entirely carried out by small farmers with holdings between several trees to 5 ha per household. Smallholder farmers hardly use pesticides, and hence this poses no immediate threat on the environment. Use of chemical fertilizers is also very limited, with most farmers of minority origin hardly use any fertilizers at all. Although the amount of applied fertilizers forms no immediate threat, in terms of Good Agricultural Practices (GAP) it is clear that farmers do not recognize the need to apply fertilizers over different applications. (EDE Consulting, 2006)

In order to get better access to the European and American market, HACCP is a must, and training processing companies on product quality and food safety and international HACCP standards is urgent since most processors are eager to access the international market.

The cashew supply chain appears rather long, and seems related to the distance between the cashew producer and the nearest cashew processor. As a consequence there are many speculating middlemen in between. This reduces traceability of the cashew flow. Smallholder producers apparently have little or no knowledge on market prices, making that collectors bargain

aggressively to buy under the market price. At farm level, there appears no perception on quality. Collectors will buy all, if the product does not fulfil the minimum quality requirements, the collectors will pre-process themselves (e.g. grading, removal of foreign matter and drying) before selling on to the processor. Creating such a production model where farmers are directly linked to the processing company or through an agent of such a company will shorten the supply chain and promote improved farm gate prices as well as a more efficient mechanism to provide product quality information from importers to producers. (EDE Consulting, 2006)

In contrast with the large state-owned companies there are smaller private processor/exporters in the market. The main differences in their approach is that the small private companies try to tie up with the producers, providing pre-financing for inputs, offering better farm-gate prices, since speculating collectors are left out and offering producers seasonal work in the processing factory.

The advantages for the producers are (i) a more secure job perspective (risk aversion through off farm activities); (ii) better farm gate prices, since collectors are left out, and (iii) easy access to loans to improve the farm-gate product quantity and quality. Advantages for the processor/trader are: (i) guaranteed and more consistent supply; (ii) improved quality assurance and (iii) access to better qualified and hence more efficient labour forces in the factory. (EDE Consulting, 2006)

Quality control depends entirely on the export market. The quality requirements for the USA are strict and require the company to apply vacuum packaging, while for other export destinations the dry cashew nuts are packed in tin boxes. A majority of processors sells to Chinese niche markets, where quality standards are not objectively defined. Those who export to the USA have their quality control done by CafeControl. Since most processing companies are new, little experience is available on the effect of processing on the final kernel quality. Hence in depth training and retraining for staff of processing factories is key. Key areas for training are:

- Support to improved risk management
- Training and retraining of workers to improve processing skills
- Training on quality and hygiene requirements for overseas export
- Development of a processing exporters handbook on good managerial practises

Skills in marketing for end products to consumers or in establishing viable marketing and distribution channels are hardly available at the level of exporters/processors. (EDE Consulting, 2006)

Livestock production (with special focus on dairy products)

The export of livestock products has declined since 1997, as domestic demand for meat picked up and the disease situation, as well as the possible weak competitiveness of Viet Nam's livestock sector, precluded trade. Former Comecon countries are now buying from more competitive markets rather than from Viet Nam. There is a niche market for suckling pigs to Hong Kong and, to a lesser extent, to Korea and Malaysia. The total value of animal products varied between US$50 and US$100 million. Poultry exports were very limited and now have ceased completely because of the Avian Influenza outbreak.

The import of animals and animal products, in particular dairy, has increased rapidly over the last years. Imports of dairy products, mainly in form of skim and whole milk powder, currently cover 80 - 85% of the demand countrywide. In 2004, dairy products were imported for a total value of US$204 million. The value of imported dairy products between 1995 and 2003 made up 0.7 - 1.5% of total government expenditures on imported goods. In 2004, Viet Nam imported 4.1 times more "fresh milk equivalent dairy products" than it could produce. (Bourgeois Luthi et al., 2006)

Meat imports are relatively limited, amounting to about US$2 million in the same year. Import of these products has been slow due to the lack of cool/frozen distribution channels to the consumer and the 40% import duty that has been imposed on most livestock products. (World Bank, 2006)

A goal of MARD is to increase dairy production to 200,000 cows producing 300,000 tons per year by 2010; pork production from 2.2 million tons in 2005 to 3.0 million tons in 2010; and poultry meat production from 330,000 tons in 2005 to 1 million tons in 2010. Most of this production will be absorbed by the domestic markets. (World Bank, 2006)

Until the eighties, dairy cow husbandry in Viet Nam was concentrated in a few large state-owned farms. Since 1980, these farms extended their production by contracting backyard raisers, mostly farm employees. During this period, only one milk processing company (the former form of Vinamilk) existed with a limited procurement network. From the eighties onwards, the dairy cow population has been growing very fast in both state and private (household)

sectors, particularly in the latter sector. This period see the emergence of State-owned (Vinamilk)) and foreign companies (Dutch Lady Viet Nam and Nestlé Viet Nam), as well as numerous smaller domestic or joint venture companies. (Bourgeois Luthi et al., 2006)

The current marketing network is dominated by Vinamilk, which tends to adopt a monopolistic attitude. Over 80% of the market share is dominated by the formal sector and Vinamilk is the leading milk processor in the country with 70% share of the total production. The vertical market integration of the dairy sector observed in Viet Nam does not play in favour of farmers, as they are not professionally organized and lack empowerment and advocacy rights. So far there is no umbrella dairy farmers association in the country.

A major issue seen in the development of dairy in Viet Nam is the absence of a long tradition in dairy consumption and production of dairy products. While the former constraint (consumption) seems to quickly become irrelevant thanks to rapid changes of consumption behaviour, the latter issue (production) will take a longer time to be addressed. The NDDP rightly points out to the fact that the country lacks experience in dairy, the absence of any tradition is however common to most of the Southeast Asian countries. Countries such as Thailand, the Philippines and Indonesia faced very similar constraints to Viet Nam, a few years earlier. It would therefore be expected that Viet Nam might learn from experiences made in neighbouring countries, in order to avoid similar mistakes (among others with the breed's choice).

Milk quality is considered the major bottleneck in the absence of any standardised milk quality-testing scheme for the whole country and no independent quality control agency carrying out regular checks at farms, collecting centres and processing factories. The absence of any dairy tradition in the country often results in inappropriate care of dairy cows, incorrect milking and general management techniques, including basic hygiene. (Bourgeois Luthi et al., 2006)

Such issues can usually be addressed through extension work, technology transfer and training. However in the Viet Namese context, with the whole dairy sector starting from scratch and expanding quickly, dairy specialists are not numerous and are still mainly researchers and policy makers. Experienced extension workers and dairy specialists working at grassroots level are still lacking. (Bourgeois Luthi et al., 2006)

Regarding quality testing of products, the Ministry of Science, Technology and Environment (MOST) has finally imposed quality control requirements on milk, milk cream, yoghurts and products containing milk constituents through Decision No. 117/2000/QD-BKHCNMT and 1010/2000/QD-BYT. Also included are butter and fats, cheese and milk curds. Several state inspection agencies have been assigned for checking the quality of imported food (milk products, flour, MSG, additives etc.) (Bourgeois Luthi et al., 2006)

In practice, however, milk quality is often still not assessed according to high and homogenous standards. Each company assesses the quality of the raw material according to its own standards. Antibiotics residues are not systematically detected by processors. Uncertain quality of raw products poses threats to both animal and human health. (Bourgeois Luthi et al., 2006)

Organisations of dairy farmers have so far not developed strongly, with the exception of some cooperatives and private projects. Many small farmers therefore lack empowerment and advocacy and have no negotiation power. Most dairy farmers have little or no opportunities to share their experiences beyond their village, commune or district.

Information sharing and dissemination with central state institutions, as well as between foreign projects is an important bottleneck at institutional level. In the absence of coordination, there is a danger that provinces implement dairy plans without considering previous experiences (both positive and negative) made in other provinces in Viet Nam. Vinamilk has been placed under the Ministry of Industry after the reorganisation of the former Ministry of Agriculture, Food and Industry (MAFI) into MARD. As a consequence, exchange of information and collaboration between relevant institutions under MARD and Vinamilk have been weakened. Considering these institutional bottlenecks, a National Dairy Management Board should be established consisting of all relevant major stakeholders of the sector (policy makers, research, universities, various relevant processors and feed companies, farmers' representatives, international projects, etc.) (Bourgeois Luthi et al., 2006)

The dairy sector is supported by an array of input suppliers. The most relevant are feed processors, fodder, agricultural by-products, semen and veterinary drug suppliers. Cattle suppliers (foreign and national) also play an important role. According to MARD, by May 2004, there were 196 feed manufacturers in Viet Nam. Local private mills make up 62% of the manufacturers, while state owned mills account for 22% of the total. The remaining 12% are foreign and join-venture firms. Of the firms, Cargill Animal Nutrition feed mills located in

Bien Hoa and Hung Yen have received HACCP certification in April 2006. Cargill Animal Nutrition is the first Viet Namese animal feed producer to have any of its plants HACCP certified.

4. SUMMARY OF FINDINGS AND CONCLUSIONS

4.1 ISSUES IN APEC

Food safety is an essential public health issue. It is a major concern for consumers, agriculture, industry and government. The importance of food safety has increased significantly in recent years following a series of global events associated with incidences of contamination and outbreaks. Those food scandals have shown the weakness and conflict of interest in situations where policy preparation, enforcement, and evaluation are left to one department, often one closely linked with the farm and processing sector rather than to consumers.

Food safety cooperation has been identified as an APEC priority over a number of years. Food safety and food standards are key factors for improving public health and safety and facilitating trade in food for APEC economies. It is a key area of the APEC Agricultural Technical Cooperation Working Group (ATCWG), especially as crucial issues in order to promote the trade in food products of developing member economies. It is clear that more and more APEC economies are beginning to focus on reforming food control systems not merely to ensure to promote the safety of foods sold on the domestic market but also to assure the safety of products entering international trade.

As a result, series of APEC food safety events have been cooperated and coordinated in order to improve coordination and develop a framework to strengthen cooperation in food safety activities across APEC economies as well as to share information and build capacity in the region to harmonize food safety regulatory frameworks with existing international food standards.

Within APEC, the trends in many of the industrialized economies (Australia, Canada, USA) are towards creating independent agencies, in particular for the policymaking and food inspection. The tendency is, therefore, to separate policymaking and evaluation from actual implementation, putting these tasks in the charge of an independent agency, at "arm's length" from the sector ministries. Technical implementation of policies (for example, vaccination campaigns and pest control) can be left to the responsibility of the technical agencies.

Food systems in developing economies are diverse and less organized, comprehensive and effective than those of developed economies. In other economies, such as Japan and China, are seeing a closer cooperation of all

institutions concerned by placing them under one lead agency. To be truly effective, such an arrangement is only effective if accompanied by clear responsibilities and lines of command in the case of an emerging food safety crisis. Experience shows, however, that such clear lines of command are difficult to establish in many bureaucracies. (World Bank, 2006)

To achieve maximum prevention it is essential that safety be built into the food production system throughout the full supply chain, from input provider to production to consumption. This calls for a comprehensive and integrated farm-to-table approach. Such a *farm-to-table approach* could most effectively reduce risk through the principle of prevention. This approach is, however, hard to implement because of the time lag, geographical differences in practices, and the variety of stakeholders. The type and size of the organization(s) that are necessary to implement the food safety strategy is also an important issue.

In order to implement effective, efficient and uniform control measures across the whole food chain throughout a country, it is important to consider the type and size of the organization(s) that are necessary to implement the food safety strategy. Where it has not been possible to have a single unified structure or an integrated food control system, for various historical and political reasons, it is necessary for this strategy to clearly identify the role of each agency, to avoid duplication of effort, and to bring about a measure of coherence between them. It should also identify areas or segments of the food chain that require special attention and need additional resources for strengthening. (Ushio, 2003)

In recent years, many countries have changed the structure of food safety management organizations and their philosophy of control to a more systematic application of risk analysis and use of HACCP principles. Strict co-operation is, however, necessary between various stakeholders in the development and implementation of safe food production measures, particularly between industry and public authorities.

Government regulatory systems can provide a framework for maintenance of food safety across the food chain (farm-to-table). Food safety laws, regulations, directives, standards, policies and procedures form a foundation for food control systems. Regulatory requirements establish limits and responsibilities, but are of little value without effective complements by all the stakeholders.

Assurance of food safety is a combined effort. Food producers at all levels of production bear a responsibility for the production of safe foods. At the farm level, farmers and workers must control pesticide and other chemical inputs

and recognize potential sources of microbial contaminants from water, soil, animals and humans. The food processing and transportation industries must assess where food safety may be jeopardized at critical points in food production and transport and take appropriate measures to control these potential hazards. Retail establishments, restaurants and other food vendors must also understand how to ensure proper sanitary practices and temperature controls. The consumer's role may be the most important in that s(he) controls food safety at the point closest to food consumption. The consumer needs the knowledge, understanding and incentive to prepare safe foods for the family.

In order to achieve certain objectives in the regulatory purpose and to encourage/guide people forward in the right direction, generally speaking, the following strategies could be used (Ushio, 2003):

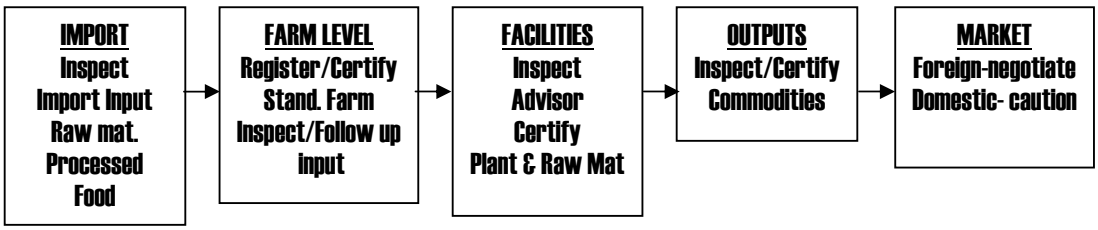
1) To appeal to an individual moral sense and ethics,
2) Economical inducements
3) Education and communication, and
4) Regulatory procedures including guidance, recommendation and legal action with penal regulations.

For developing countries, the food safety strategy of Thailand may be a good example. This strategy covers import through quarantine inspection and the control of inputs, export through certification to comply with requirements of importing countries as well as domestic production, processing and handling. Thailand has adopted the policy of single standards for both export and domestic products.

The second aspect of the strategy is to develop and promote Good Agriculture Practice (GAP) in order to:

- Guarantee food hygiene and safety for consumers;
- Increase farmer income; and
- Reduce the use of pesticides.

The third aspect is to implement traceability procedures from farm-to-table, as exemplified by the following figure.



4.2 MAIN ISSUES EMERGING FROM THE VIET NAM STUDY

Improving food safety is in line with the main goals of Viet Nam for both domestic and export-oriented development strategy. The Action Plan for Food Safety and is to improve living standards of people in and outside of Viet Nam by improving their access to safe and healthy food and minimizing the loss in human well-being caused by food-borne diseases is given by the Government in recent years, also as the results of commitments when Viet Nam integrating the world economy.

The Vietnamese Ministries involved in food safety are defined, from farm to table. The new food safety approach based on the five basic principle has introduced and wide applied include: Farm to Table approach, integrated agricultural health safeguarding system, risk analysis concept, increasing reliance on international safety and quality control systems such as the Hazard Analysis and Critical Control Points (HACCP) and ISO standards, and broad-based institutions.

A food regulatory system is also changing to accommodate the needs of domestic and international communities. With continuing growth of domestic and export markets as well as increasing food imports, food safety and quality issues therefore are a high priority in Viet Nam. Viet Nam has already made great efforts in improving its regulatory framework, but in several areas still more needs to be done. However, building the necessary regulatory framework is one, getting a whole agricultural production sector to adopt such an approach is a different matter. With a much stronger focus on the total food chain worldwide, the coordination between different institutions has gained major importance in recent years.

Food safety management in Viet Nam has traditionally focused on enforcement mechanisms to remove unsafe food from the market after the fact. In recent years there has been some change to a farm-to-table approach and the use of internationally recognized food safety systems, such as GAP, GMP, GHP and HACCP.

Adopt a food chain framework at the Ministerial level is one, getting a whole agricultural production and processing sector to adopt such an approach is a different matter and not an easy one. There are several reasons for this, which were highlighted in the sections on food safety issues in a number of specific commodities:

i. Individual small-scale farmers produce most foods in the country. With an average total landholding size of about 0.5, this fragmented and geographically diversified producer base creates many challenges.

ii. Incentives for producers producing "safer" foods are often very low since producing "safer" food is more costly and labour-intensive. However, demand for "safer: products from the side of the buyers is still low. Farmers will thus not invest more money and labour if the economic incentives are lacking.

iii. Credible inspection services for regulatory safe food programmes are not well developed, which results in low confidence among domestic consumers in government safe food programmes.

iv. Enforcement of food hygiene and health safety regulations is still weak and not systematic. This can also be said of the implementation of regulations on production and processing.

v. Contracts with producers often do not exist and, when they exist, contract compliance and enforcement, the responsibility of provinces and districts, remains a problem. Farmers are often reported for not complying with quality standards, use of inputs (pesticides, antibiotics), and delivery problems, whereas buyers are reported to change prices or other conditions as market conditions change. Price incentives for safe and quality food offered by the integrators are often insufficient to meet the increased production costs incurred by farmers. Underlying causes include both the lack of suitable contract forms and of stable partnerships between participants as well as smallholders' fragmentation.

vi. The agricultural processing industry is operating below its potential because of the high incidence of outdated equipment. For example, poor drying and preservation methods after the harvests cause a loss of 18 - 22% of the crop output annually. Another problem is that the processing plants are not well distributed to service a number of key production areas.

vii. A modem packaging industry and cold chain infrastructure are only beginning to emerge in Viet Nam. Foreign and joint stock enterprises have been particularly important in export oriented sub-sectors, such as the fisheries, pepper, coffee, nut, and juice industries. These sectors have all faced quality issues for some time regarding their products, but have, through joint ventures with foreign investors, successfully adopted the requirements of other countries and introduced quality control systems such as HACCP and EurepGAP.

viii. Funding of processing (in particular, slaughterhouses), cold storage, food treatment facilities, wholesale markets, and other major investment in infrastructure along the food chain to meet the growing demand for safe and higher-quality food will be a major constraint. While funding of this infrastructure is mainly a private sector responsibility, the direct effect of these investments on public health, environment, and poverty reduction might justify a share of public funding. Initial government supports in the forms of initial rootstock, applied research, extension and quality management services, investment in primary production, and post-harvest infrastructure are also required to develop smallholder systems capable of competing in the world marketplace, similar to the pattern followed by some other countries.

ix. The importance of a strong producers' association was highlighted during the catfish issue between Viet Nam and the USA: the Viet Nam Association of Seafood Exporters and Producers (VASEP) strongly represents aquaculture producers abroad and in the country. The success of dairy development in many countries, among others India, bases on a strong organisational capacity of the farmers. The development of similar producer associations in other agricultural sectors is very crucial to the improvement of the different product supply chains. However setting up such groups can be done in the long term only.

x. Consumer organisations in Viet Nam, presently, do not play an important role. The few organisations that exist operate more as "social clubs" and do not have lobbying for policy change as a high priority. They definitely do not have the "watchdog" role that such organisations often have in other countries. They are also not seen by many government officials as equal partners in discussions on, for example, food safety issues.

xi. Capacity in developing programs in Viet Nam on GAP and in its implementation need to improve.

5. RECOMMENDATIONS

5.1 AT APEC LEVEL

Weaknesses and variations in food-borne **disease surveillance systems**, where such programmes exist, make a global estimation of food-borne diseases difficult. However, such data are essential for raising awareness about existing problems, setting priority food safety measures, using resources in a cost-effective way, and evaluating the impact of measures. At the national level, countries should consider developing or strengthening their food-borne disease investigation and surveillance system.

At the international level, there is need to provide further guidance in investigation and surveillance and to harmonize disease surveillance systems reporting systems.

Further application of the **risk analysis approach** to food safety management in developing countries requires additional investigation and more transfer of knowledge and information, as well as an efficient sharing of relevant data between countries. International organizations, such as FAO and WHO, could play a pivotal role in mediating this development.

Risk assessment within the food safety management is science-based. Developing countries may not have sufficient capacity of funding for the necessary research. Countries should more effectively share information and/or support relevant scientific research in resource poorer countries.

Several APEC economies already provide **capacity building** for APEC economies. This could be further enhanced by increased coordination of activities and identification of priority issues.

It is intended that APEC economies work together to develop better regulatory regimes that would suit their needs and operating environments. This can be achieved by establishing **a network** that shares information in areas such as:

- National food regulatory frameworks for food safety harmonised with international standards.
- Best Practice in food control systems, including mechanisms to develop and implement risk analysis based enforcement strategies, and certification processes.
- Food monitoring and surveillance systems.

Countries, including Viet Nam, have very little experience with GAP or HACCP based programmes and could benefit greatly from such information sharing opportunities.

Several international forums have in recent years stressed that communication and consumer involvement both need further development in many national food safety systems. It is therefore necessary to develop transparent **information-sharing and communication networks** that provide accurate and timely information to consumers and producers on food safety.

Consumer education is key to success of any food safety programme, different countries will have different experiences and they could greatly learn from each other. APEC could therefore facilitate cross learning on development of consumer education programs and tools among its member countries.

APEC works towards establishing **food safety regulatory systems**, including food inspection/assurance and certification systems. In the development of such systems, particular areas of attention are:

- Legislative framework for conformity assessment bodies.
- Laboratory capacity (capacity to carry out appropriate testing sampling and analysis)
- Communication (electronic information exchange systems regarding recall, communication with trade partners and consumer information)
- Personnel and training of inspectors.
- HACCP audit.
- Evaluation and data collection

To enable the development of national food safety regulatory frameworks that are harmonised with international standards, it will be crucial to enhance **skills and human resource capacities.** The following areas are of main importance:

- Food safety capacity evaluation
- General training of inspectors using international standards (e.g. Codex, HACCP)
- Food handling and preventative approaches to food-borne risks (General principles of food hygiene).
- Microbiological risk analysis.

- Risk analysis in chemical safety.
- Increasing analytical capacity and training.
- GMO food safety risk assessment

In many countries the private sector is a major player in the development of safe and organic foods. Strategies should be developed to encourage more investment in these sectors, while taking into account the balance between private and state involvement in production and trade.

In many APEC countries, including Viet Nam, the range of organic foods produced and marketed is still small. Several other countries have made great improvements after developing and adopting comprehensive action plans for organic agriculture. It would therefore be useful to further investigate the possibilities to support the development of such action plans.

The introduction of HACCP-based in-house control may be difficult in small and medium-sized enterprises with limited basic knowledge, experience and resources and is probably best achieved by collaboration between the food industry, education and training organizations and the supervisory authorities. APEC could consider developing special programmes in this area through its relevant Working Groups, such as the Small and Medium Enterprises Working Group's (SMEWG).

To improve the efficiency of food production and trade for the benefits of APEC member economies, as well as to comply with food-related goals set by the APEC Food System, namely (i) development of rural infrastructure, (ii) promotion of trade in food products, and (iii) dissemination of technological advances in food production and processing, series of activities are recommended in the below Table.

RECOMMENDED FOLLOW-UP ACTIVITIES TOWARDS FOOD SAFETY AND TRADE FACILITATION IN APEC REGION

Expected Outputs	Activities	Participating economies	Timeframe
I. Education and awareness raising	Establishment of APEC food safety information sharing network – National food regulatory frameworks for food safety harmonised with international standards. – Best Practice in food control systems, including mechanisms to develop and implement risk analysis based enforcement strategies, and certification processes. – Food monitoring and surveillance systems.	All APEC member economies	2007
	Development of APEC training strategy for safer food in the areas of food law, feed law, animal health, as well as animal and plant welfare rules	Australia, China, Korea and the US to take lead	2007 – 2008

	Campaign to raise awareness on food safety: – Dissemination of information through specialized channels, public forum and interested groups' forum as well as through mass media – Training courses, workshops and seminars – Publications	All APEC member economies	2007 - 2008
	Introduction of "from-farm-to-table" approach	Thailand to take lead	2007 - 2009
II. Promotion of trade in food products	Training courses on: – Risk assessment in food safety measures – Development of food standards – Safety assessment of genetically modified foods (GMF)	Developed member economies to provide training for developing member economies	2007 – 2010
	Development of Good Agriculture Practice (GAP), Good Manufacturing Practice (GMP) and Good Hygiene Practice (GHP)	Australia to take lead	2007 – 2009
	Harmonization of food safety standards with internationally recognized standards	Interested APEC member economies	2007 - 2010

III. Dissemination of advanced technologies in food production and processing	Improve capacity of APEC member economies to trade in food products – Develop regional laboratory network – Consolidate national laboratories by upgrading lab equipment for sample taking and analysis, analysis and assessment of residue levels	Developed member economies to support developing member economies	2007 - 2010
	Training courses on GAP, GMP, HACCP	Australia, China, Korea and the US to take lead	2007 - 2010
	Cooperate in research and development (R&D)	All APEC member economies	2007 - 2010
	Foster environmental sound policies	China, Japan, Chinese Taipei and the Philippines to take lead	2007 - 2008

5.2 SPECIFIC RECOMMENDATIONS FOR VIET NAM

For Viet Nam, In order to deal with the food safety, the Goals, Strategic Priorities of the Action Plan for Food Safety in the next coming years will be address as follows:

- Reduce food-related impacts on human health in Viet Nam including: (i) Improve disease diagnostics, through shift to active disease surveillance systems and modernization of laboratory equipment and infrastructure, and strengthen reporting and dissemination channels; (ii) Raise awareness among decision makers, public servants, producers, traders and consumers.

- Growth in exports of high-value products through improving business climate for private investors, in particular regarding mutual contract enforcement under vertical integration arrangements and developing integrated supply chain, including SPS and quality management (HACCP systems)

- Improving pest/disease diagnostics, through a shift to active surveillance, modernized laboratory equipment and strengthened reporting and dissemination channels between field and national authorities; strengthening border control and quarantine facilities in combination with regional quarantine and surveillances in order to Improve agricultural health.

- Ensure effective coordination of WTO SPS commitments through operationalizing the SPS Enquiry Point and Notification Authority and promoting active participation in Codex, IPPC and OIE activities as well as adopting international standards for SPS regulations progressively

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ANNEX

PAPERS FROM THE REGIONAL WORKSHOP ON FOOD SAFETY, 9 – 10 OCTOBER. 2006, HA NOI – VIET NAM

ANNEX 1

"FOOD SAFETY – SITUATION AND SOLUTIONS"
PAPER PREPARED BY AUSTRALIA

NATIONAL FOOD CONTROL SYSTEM

1. Structure and organization of official services responsible for food control in Australia

Food safety issues in Australia are managed at the national level by the Australian Government Department of Agriculture, Fisheries and Forestry (DAFF) and its associated agency - the Australian Quarantine and Inspection Service (AQIS); and by the Australian Government Department of Health and Ageing (DoHA) and its associated agency - Food Standards Australia New Zealand (FSANZ). The development and implementation of food safety policies and programs is undertaken by these agencies in close consultation with state and territory governments, who have constitutional responsibility for public health and safety within Australia.

2. Legislation and regulations on food safety and quality including import/export matters

Food Regulatory System

A number of policy guidelines have been considered by the Australia New Zealand Food Regulation Ministerial Council (Ministerial Council) over the past two years. The Ministerial Council is primarily responsible for the development of domestic food regulatory policy and the development of policy guidelines for setting domestic food standards. It has the capacity to adopt, amend or reject standards and to request that these be reviewed.

The following policy issues were considered by the Ministerial Council:

- Review of the intent of Part 2.9 of the Food Standards Code (Special Purpose Foods)

The Ministerial Council agreed that Food Standards Australia New Zealand will conduct a review of the intent of Part 2.9 - Special Purpose Foods of the Food Standards Code. The purpose of the review is to ensure that Part 2.9 of the Food Standards Code is only used for those foods that are prepared for at-risk groups whose dietary requirements cannot always be satisfied by a normal diet. It should not apply to foods that are promoted and consumed as general foods.

- Fortification of Foods with Vitamins and Minerals
  The Ministerial Council on 5 May 2006 made a minor amendment to the Policy Guideline. The amendment deals with issues relating to the process for determining the significance of health problems and the effectiveness of strategies for addressing these.

- Primary Production and Processing Standards
  The Ministerial Council revised the Policy Guideline for the Primary Production and Processing Standards in order to reflect improved operating processes since 2002 and to correct inconsistencies between the guideline and the *Food Standards Australia New Zealand Act 1991*.

The following policy guidelines are being developed for consideration by the Ministerial Council:

- Maximum Residue Levels
  Standard 1.4.2 of the Food Standards Code - *Maximum Residue Limits* (MRLs) regulates the residues that are permitted in food. Currently, under Australian State, Territory and Commonwealth Government food legislation (subject to some exceptions for food from New Zealand), there must be no detectable residue (zero tolerance) in a food commodity for which an MRL has not been established in Standard 1.4.2 of the Code. Policy Guidelines are being considered by the Ministerial Council to form a framework within which FSANZ is to consider alternative approaches to address the issues surrounding the current zero tolerance approach to the regulation of residues of agricultural and veterinary chemicals in food.

- Addition of substances other than vitamins and minerals
  A Working Group is developing a policy guideline on the addition to food of substances other than vitamins and minerals through consultations with

jurisdictions, public health, consumer, industry and Government sectors. In January 2006 the Working Group released a *Policy Option Consultation Paper on the Addition of Substances other than Vitamins and Minerals* to assist in further defining issues in developing the policy guidelines.

The Joint Australia New Zealand Food Standards Code

Major areas of new work have continued in the area of Primary Production and Processing standards and the development of standards in accordance with the policy guidelines received from Ministerial Council.

Australia is continuing to work towards managing food safety from 'paddock to plate' by developing mandatory, nationally consistent food standards.

3. Primary Production and Processing Standards

These Standards will complement other existing food safety Standards that apply to the manufacturing, processing and retail sectors of the food supply chain.

- Work has been completed on the Primary Production and Processing Standards for Seafood and Dairy.
- Work has commenced on Primary Production Standards for Eggs and Plant and Plant products.

Policy driven initiatives have included development work on issues such as; Nutrition Health and Related Claims, Fortification of Foods and Country of Origin Labelling.

The development of a standard for Nutrition, Health and Related Claims addresses nutrient content, nutrition function and risk reduction claims. A regulatory model is being considered that includes claim criteria underpinned by scientific substantiation.

Implementation of the policy direction on fortification of foods addresses both voluntary and mandatory fortification of food. The current focus is on the proposed mandatory addition of folic acid and iodine to the food supply to address public health concerns.

In addition to the above there has been growing interest in permissions for Novel Foods to enter the food supply. Examples of this include; Phytosterol esters as ingredients in breakfast cereal bars and in low fat milk and low fat yoghurt. In addition a review of 1.5.1 – Novel Foods has been initiated.

A review of kava has recently been completed which included consideration of recent cases of liver toxicity associated with the use of kava containing herbal preparations in capsule/tablet form presented as dietary supplements/ complementary medicines. The review of kava recommended that Standard 2.6.3 – Kava be amended to include a revised definition of kava which excludes the use in food of kava extracts prepared by organic solvent extraction.

Pre-market assessment of genetically modified (GM) food commodities is ongoing. To date, thirty-four safety assessments have been undertaken, with twenty-nine of these lines approved and five still under assessment. Approved GM commodities include corn, cotton, canola, soybean, potato and sugarbeet. Predominantly, the modifications are to agronomic characteristics such as herbicide tolerance and insect resistance. Some recent assessments have been for GM crops developed primarily as animal feed, for example corn with high lysine levels and glyphosate-tolerant lucerne.

The current requirements for processing aids are also under review. These reviews are to consider incorporating processing aids used in New Zealand that may have been inadvertently omitted and to address anomalies and nomenclature rather than to incorporate new processing aids or alter the structure of Standard 1.3.3.

A survey on the use of artificial sweeteners; (which generally indicates use levels below the ADI), with the exception of cyclamate, at the levels currently provided in Standard 1.3.1 – Food Additives, has been completed. A proposal has been initiated to assess cyclamate.

4. Food Safety Programs

FSANZ has also commenced work on proposals to mandate compulsory HACCP based food safety programs for high risk business sectors. Work has been completed on new standards to mandate food safety programs for food service to vulnerable populations and for the production of ready to eat meat. Work has

commenced on a new standard to mandate food safety programs for catering activities serving the general public.

5. Co-operation with other countries on food legislation and food control matters including establishment of equivalence or other trade facilitation agreements (e.g. Memorandum of Understanding) as well as training activities.

FSANZ is widely recognised in the Asia-Pacific region as a centre of excellence in food regulation and a leader in food regulation issues. FSANZ have undertaken a range of training activities in the region, over many years, designed to strengthen Australia's working relationships with these countries.

In 2005-06, FSANZ drew on scientific and technical expertise to provide training in a range of areas i.e. food regulatory framework; chemical risk assessment; microbiological risk assessment; and developing food laws, standards and enforcement systems. FSANZ does not receive budget funding for these activities and must rely on funding by AusAid and other external sources. During the year, FSANZ provided training to seventy participants from fifteen countries. Evaluations and feedback indicated that this activity was highly regarded by participants and their food regulatory agencies. Australia has also sought to strengthen their relationships in the region by collaborating on food safety through the Asia Pacific Economic Cooperation (APEC) Forum.

6. Capacity building in the region

FSANZ is developing a new mode of training that enhances sustainability of the learning and skills transfer. FSANZ's usual approach to capacity building has been to provide intensive training in a discipline over a week to groups of up to 25 people from overseas regulators, using examples from local and Australian situations. Now, with a focus on sustainability, they are altering their approach to require project work by the participants over the six months following the initial training course. This allows participants to immediately apply general principles to a specific situation. Because the organisations from which the participants come have approved the projects, the techniques and practices learned by participants can become embedded in the organisation more quickly than before. Under this enhanced sustainability model, FSANZ provide mentoring for each

participant over the six month life of the project, at which time participants assemble at a seminar to present their projects, goals and outcomes achieved.

This year, FSANZ introduced the enhanced sustainability model of capacity building in two disciplines: microbiological risk analysis and chemical risk analysis (see below for case study). Both activities are at the mentoring stage and will conclude in 2006-07. Feedback from participants to date indicates a high degree of acceptance of this form of capacity building.

In another initiative FSANZ sought to broaden the scope of material presented to participants beyond the specific areas of our expertise by partnering with other agencies. FSANZ applied this approach to the training course on 'developing food laws, standards and enforcement systems' in association with Safefood Queensland – the agency with responsibility for implementing and enforcing food standards in that state. FSANZ were thereby able to deliver training that covered the full continuum of the food regulatory system.

7. Case study – chemical risk analysis

As part of its contribution to capacity building in the region, FSANZ delivered two workshops on chemical risk analysis. The first was held in Canberra, Australia during November 2005, funded by AusAID. A total of 22 government food regulators attended the course from Vietnam, Indonesia, Thailand, Philippines, China and Saudi Arabia. FSANZ placed particular emphasis on the principles of the risk analysis of chemicals in food, with a number of case studies incorporated into the training activities. Risk management and risk communication and their roles in strengthening food safety were also examined.

FSANZ held the second chemical risk assessment workshop in May 2006. Participants came from each of the ten countries from the Association of South-East Asian Nations (ASEAN). The workshop formed part of the broader AusAID-funded program 'Strengthening Risk Assessment Capacity to Support Food Safety Measures', which includes both microbiological and chemical risk assessment. The program is managed by Australian Marine Science and Technology Ltd.

Following the initial workshop, which included lectures, discussions, workshop sessions and practical assistance in the preparation of a case study report, the

participants are required to work in groups to conduct risk assessments on three case studies over the following six months. FSANZ will assist in the preparation of these reports through a progress workshop to be held in August. The participants will present their final reports for the case studies in November 2006.

8. APEC Food Safety Cooperation Initiative

Australia is sponsoring a project in collaboration with China and with the support of Thailand and Vietnam to enhance food safety cooperation by member economies. Specifically, the aim of the initiative is to support APEC economies to accelerate their progress towards harmonisation of food standards with existing international standards, improve food safety outcomes and improved market access.

This is a whole-of-government project and is presented to APEC as a proposal of the Australian Government. Agencies involved include Food Standards Australia New Zealand, the Australian Government Departments of Agriculture, Fisheries and Forestry; Foreign Affairs and Trade; Prime Minister and Cabinet; and of Health and Ageing.

Australia began work on the project in September 2005 at a seminar in the margins of the APEC Senior Officers Meeting. Member economies at the seminar agreed that APEC should develop a food safety cooperation initiative. China offered to collaborate as Co-Chair of the initiative and Thailand and Vietnam also offered their support as 'Friends of the Chair'.

The seminar agreed that member economies should provide information on similar international activities already being undertaken, so as not to duplicate efforts, and on the food safety needs of member economies. In collaboration with China, Australia conducted a stock take (needs analysis) and reported the results to APEC members at a seminar in February 2006. APEC member economies then agreed that further work should be undertaken to identify priorities for information sharing and capacity building, and practical measures for cooperative action. These activities are currently underway and will be concluded in 2006-07. The first meeting of the APEC Food Safety Cooperation Forum will be held in April 2007 in Australia. A proposed list of capacity building activities for 2007-2009 will be the final outcome of the project.

9 Department of Agriculture, Fisheries and Forestry (DAFF) Pacific Strategy

DAFF has recently created a pacific Desk within its International Division. One of the first tasks of this position will be to develop a Pacific Strategy for the Department's work in the areas of fisheries, quarantine, biosecurity, forestry, international standards and trade. This will allow DAFF to better focus its activities, deepen its experience and expertise in key areas and align resources to strategic objectives.

In developing the strategy, DAFF will also be consulting with the Department of Foreign Affairs and Trade, AusAID, and the Australian Centre for International Agricultural Research.

ANNEX 2

CHINESE POLICY ON FOOD SAFETY
CURRENT STATUS AND FUTURE DIRECTIONS

Qian Yongzhong
Institute of Quality Standards & Testing Technology for Agri-Products,
Chinese Academy of Agricultural Sciences, P. R. China

1. Introduction

In recent years, major food safety issues such as BSE, FMD, Bird Influenza, Dioxin etc. have exerted great impact upon the global economy and social development. Food safety not only directly associates with public health, but also has huge impact on the national trade. Along with economic globalization and increase of international food trade, many countries have drawn up strict laws, regulations and standards for food. At present, food safety has become a great global strategic issue and attracted more and more concerns among governments and consumers.

Since the reform and opening up, China has made world-renowned achievements in increasing and diversifying food supply, improving people's nutrition status. In 2005, food enterprises with national scale have accomplished gross industrial output value amounting to 2,034.5trillion Yuan, which is 8.15% of total domestic industrial share. Chinese government has treated food safety issue as very important task. In recent years, a series of action plans have been implemented to ensure food quality and safety. A series of laws and regulations have been promulgated. Progresses have been made through smooth cooperation among different concerned administrative departments.

Judging from the monitoring results obtained by MOA in recently years, China's food safety level has upgraded dramatically. From 2001, under the organization of agricultural authorities, related testing institutions conducted continuous inspection and testing over the vegetable products, livestock products and aquatic products available in plantation bases, wholesale markets and retail markets from the major cities. The monitoring results in June 2006 indicated that,

according to the standards issued by CAC, the qualified products about the residue in vegetables account for 94.7% in 37 cities, the qualified products according to the inspection over clenbuterol in livestock products, account for 99% in 22 cities, and 99.2% in 8 cities about the chloramphenicol in aquatic products.

2. Food safety regulatory framework in China

Food safety regulatory framework in China is consisted of relevant departments of the State Council and local governments in accordance with policies and laws. Within this framework, all departments concerned cooperate with each other to form a comprehensive food safety guarantee system. In the central government, the responsibilities of food safety are shared jointly by the State Food and Drug Administration (SFDA), the Ministry of Health (MOH), the Ministry of Agriculture (MOA), the General Administration of Quality Supervision, Inspection and Quarantine (AQSIQ), the State Administration for Industry & Commerce (SAIC), the Ministry of Commerce (MOC), and etc.

To clarify the responsibility of food safety control, the State Council defined the responsibilities of each government agencies in the document of *Decision on Further Strengthening the Affairs of Food Safety* in September 2004, food safety is administrated in a way that one specific department is in charge of a specific regulatory chain. Following are respective law basis and responsibilities for the concerned departments:

(1) MOA — responsible for administration of primary agro-products

---- According to the Law on Quality and Safety of Agricultural Products (2006), the Cattle Breeding Law (2006) and the Agriculture Law (2002), MOA is responsible for the administration of agricultural production process and agro-product quality & safety.

---- According to the Seed Law (2004), Regulations on Administration of Veterinary Drugs (2004), Pesticide Administration regulation(2001)and Regulations on Control of Feeds and Feed Additives (2001), MOA is responsible for the market access control of agricultural input and administration of pesticide and veterinary drugs residue, feed and feed additives and transgenic biological safety.

---- According to the measure on administration of Safety Agro-Products (2002) and the measure on Administration of Green Food Labeling, MOA is responsible for administration of safety agro-product and green food.

(2) AQSIQ (including the Chinese Association for Accreditation and Certification and the Committee of Standardization) is responsible for administration of food production and processing sector.

---- According to the Import and Export Merchandise Inspection Law (2002) and the Import and Export Animal and Plant Quarantine Law (1991), the AQSIQ is responsible for inspection and quarantine for import and export commodities (including agro-products).

---- According to the Product Quality Law (2000), the AQSIQ is responsible for quality supervision and management for production chain of industrial products.

---- According to the Standardization Law (1988), the AQSIQ is responsible for national standardization business and in charge of the promulgation of national standards in agricultural sector.

---- According to the Act for Accreditation and Certification (2003), the AQSIQ is responsible for administration, supervision and coordination of the accreditation, certification and registration for qualified goods.

(3) MOH — responsible for administration of the consuming sector

---- According to the Food Hygiene Law, MOH is responsible for supervision and administration for national food hygiene, and establishment of national food hygiene standards.

(4) SAIC — responsible for administration of food transportation sector

---- According to the Labeling Law, Advertising Law, Counter Malfeasant-Competition Law and Consumer Protection Law, the State Administration for Industry & Commerce is responsible for quality supervision and management in transportation sector to protect the rights of consumers.

(5) SFDA — responsible for general supervision, coordination of food safety and dealing with major issues based on the relevant laws

Except the departments mentioned above, some other governmental agencies also participate food inspection and control, such as the Ministry of Sciences and

Technology (MoST) being in charge of food safety technology, the State Environmental Protection Administration (SEPA) participating in the monitoring and control of the discharge of the pollutants.

3. Major achievements of food safety in China

(1) Better enhancement of food safety standards

Under the unified supervision by the National Standardization Committee cooperated with relevant departments in hygiene, agriculture and quality inspection sectors, a framework food safety standard system has been established involving national standards, industry standards, local standards and enterprise standards. Up to late 2002, the food national standards and industrial standards have accounted to more than 3000 items and nearly 4000 items respectively involving food processing and agro-food product standards, food industrial standards, food inspection method standards, food hygiene standards, food packaging material standards and container standards etc.

Taken the importance of standards system, MOA and the Ministry of Finance have jointly implemented a program for the constitute and revision of industry standards of agriculture since 1999, which supported the constitution and revision of quality and safety standards for 350 kinds of harm-free Agro-Products with special funds 30 million Yuan each year. MoST has carried out the research on the technical standards of food safety “from farm to table” in China, together with MOH, MOA, AQSIQ, etc.

(2) Formation of food safety monitoring system framework

Food safety inspection and monitoring agencies in China are distributed in various departments of the MOH, MOA, AQSIQ and so on.

MOH has established and gradually the National Food Safety Monitoring System, namely, the Food Contaminants Monitoring System (focusing on chemical pollutants) and the Food-borne Disease Monitoring System (focusing on biological pollution and food poisoning).

Up to late 2005, MOA has established 280 national and ministerial agro-food quality monitoring, inspection and quarantine centers, and has helped more than

one third of county cities to establish quality and safety inspection stations of agricultural products with emphasis on rapid inspection. By unremitting efforts, agricultural departments have set up prevention and quarantine system for animal and plants from central government level to country level, which have been playing a very important role. The inspection is targeted at agricultural environment, agricultural inputs, agricultural products, and etc. The system is capable of inspection the whole process from the production of agricultural inputs and the environment of agricultural production areas to the production and consumption of agricultural products.

AQSIQ has basically formed mature system for food safety testing and inspection and have established more than 2,500 technological institutions for food and agricultural product inspection across the country.

MOC have established market inspection system. Large-scale wholesale markets of agricultural products and sideline products have been equipped with the equipments for hygiene and quality inspection and the technical personnel. And retailing markets with inspection service are on the increase.

(3) Control of market access

Based on the principle of separate administration of food safety, the AQSIQ has been carrying out market access control on all food for sale in accordance with relevant regulations since 2003. Production capacity and quality assurance of food producing premise are to be assessed based on the relevant laws. One who meets the requirement will get production permission. Meanwhile, compulsory inspections are required to all products and only qualified ones can get market access permission with a QS label. According to national standards regulation, there are 28 major categories of products and over 500 processed foods. Up to July, 2006, there are 15 major categories and 370 processed foods receiving market access control.

Taking vegetables and livestock products as emphasis, MOA has made progress in the whole process traceability for agro-product quality & safety and market access control through establishing production and selling interactive mechanism, carrying out agro-product labeling management, setting up special selling zone for safe agro-product and implementing consecutive logistic service.

In the Law on Quality and Safety of Agricultural Products newly promulgated in 2006, five categories of agro-products are banned to enter the market.

(4) Establishment of response mechanism for major food safety issues

Since the outbreak of SARS in May 2003, the State Council has given high priority to the establishment of rapid action plan and response mechanism toward the emergencies of public health and formulated relevant regulations. In 2006, the Office of the State Council issued several important action plans for dealing with major food safety accidents. A task-force will be set up in the SFDA in case of food safety accidents occurrence to lead and coordinate the response action.

(5) Improvement of the food safety information transparency

With the occurrence of food safety accidents, consumers and all the interested stakeholders are become more and more concerned and requesting further information on the food safety. In 2004, eight relevant ministries including the SFDA, MOH, MOC, the Ministry of Public Security, etc. jointly promulgated a measure on Food Safety Surveillance Information Publishing to make sure that every local food and drug administration takes the responsibilities to ensure the scientific and smooth publication of the information. In the Law on Quality and Safety of Agricultural Products, the MOA is authorized to publish information in terms of agro-product quality and safety, monitoring information and agro-product quality and safety issues. Besides, plenty of work has been done by governments at provincial levels to secure the public health and facilitate the development of food industry.

4. Future Direction

Compared with the past, China has made great achievements in improving its food safety. Especially in recent years, China's government has always been cracking down on the counterfeit and shoddy food for neatening market system and taking a series of other measures to promoting food safety. In general, cases of counterfeit and shoddy food decreased quickly, the situation of food safety getting better. However it is advisable to understand that for a long time China's food supply system has been generally organized around the solution of food supply volume. Thus the food industry is ill-prepared to get adapted to the safety supervision requirement in raw material supply, production, process, packing,

selling, etc. Factors leading to food safety events exist in the whole process of food supplies. Potential safety risks remain in every main type of food. Many events of food safety occur frequently. The shortage exists evidently in scientific and technologically system, law system, standard system, inspection system and certification system of food system, so the food safety will attract more and more concerns among governments and consumers. The main future direction can be summarized as follows:

(1) To improve The laws and regulations

----- To modify the law of food hygiene. Modifying the law of food hygiene was incorporated legislation plan in order to improve food safety supervision system and strengthen to execute the law relating to food safety.

----- To modify the standardization law. At present the draft of the standardization law modified was being censoring in order to consolidate the unified administration of standards.

----- To formulate the supporting regulations of the law on quality and safety for agricultural product. In order to implement the law on quality and safety for agricultural product, at present MOA is drafting out the regulation of the management of Production Place of Agricultural Products safety, the regulation of the management for monitoring quality and safety of agricultural product, the regulation of the management of Packaging and Labeling of Agricultural Products, the regulation of the accreditation of Agencies for testing the quality and safety of agricultural products. Those regulations will be enacted before November 1, 2006 and go into effect as of November 1, 2006.

(2) To implement the Law on Quality and Safety of Agricultural Products and intensify the control of farm-source contaminant

The law on quality and safety of agricultural product pays attention to the whole-process control “from farm to table”, focusing on the Control of Farm-source contaminant. The key content can be summarized as following:

- Production Place of Agricultural Products

---- some areas are not suited to certain agricultural products in view of the requirements for ensuring the quality and safety of agricultural products, the properties of the varieties, and the toxic and harmful substances in the

atmosphere, soil and water body of the production areas, it shall propose prohibiting production of such varieties in the said areas

---- Discharging waste water or exhaust gas or dumping solid wastes or other toxic or harmful substances to the production places of agricultural products in violation of the provisions of relevant laws and regulations is prohibited.

- Production process management

---- Agricultural producers and specialized cooperative economic organizations of farmers shall keep records of the production of agricultural products. If it fails to establish or keep production records of agricultural products or fabricates such records shall be ordered to rectify within a time limit; if it fails to rectify at the expiration of the time limit, it may be fined not more than 2,000 Yuan.

---- An administrative permission system shall be applied to such pesticides, veterinary medicine, feed and feed additives, fertilizers and veterinary instruments as may impair the quality and safety of agricultural products.

---- Agricultural producers shall make rational use of agricultural inputs. Application of any agricultural inputs in the course of agricultural production that are explicitly prohibited by the State is prohibited.

---- Agricultural producers and specialized cooperative economic organizations of farmers shall test the quality and safety of their products themselves or entrust the testing to a testing agency in order to enhance management through self-discipline.

- Packaging and Labeling of Agricultural Products

---- Where agricultural products to be marketed by agricultural producers, specialized cooperative economic organizations of farmers, and by units or individuals engaged in the purchase of agricultural products need be packed or labeled according to regulations, they shall be marketed only after they are packaged or labeled.

---- Antistaling agents, preservatives, additives and other materials used in the process of packaging, preservation, storage and transportation of agricultural products shall be in conformity with the relevant compulsory technical specifications set by the State.

- Market supervision

------ Access to market to be prescribed, no agricultural products may be marketed under any of the following circumstances:

I. Containing pesticides, veterinary medicine or other chemical substances banned by the State;

II. The residues of chemical substances, such as pesticides and veterinary medicine, or the toxic and harmful substances contained, such as heavy metals, are not in conformity with the quality and safety standards of agricultural products;

III. The pathogenic parasites, microorganisms or biologic toxin contained are not in conformity with the quality and safety standards of agricultural products;

IV. The materials used, such as antistaling agents, preservatives and additives, are not in conformity with the compulsory technical specifications set by the State; and

V. Other circumstances where the quality and safety standards of agricultural products are not measured up to.

- A system for monitoring the quality and safety of agricultural products

----- The administrative departments for agriculture under the people's governments at or above the county level shall, in compliance with the requirements for ensuring the quality and safety of agricultural products, draw up plans for monitoring the quality and safety of agricultural products and organize implementation of the plans, and conduct regular supervision and make spot-checks of the agricultural products under production or on the market. They shall have the right to seal up or seize the agricultural products that fail to pass the inspection based on the quality and safety standards of agricultural products.

- Publication of information

---- The administrative department for agriculture under the State Council and the administrative departments for agriculture under the people's governments of the provinces, autonomous regions, and municipalities directly under the Central

Government shall, in compliance with their duties and within limits of their powers, publish information about the quality and safety of agricultural products.

(3) To accelerate the formulation and amendment of standards

---- To amend the half of national standards in 2 years focused on the hygiene standards and the related inspection method standards relating to food additives, the residues of chemical, food packaging materials, infant and baby food and so on.

---- To strengthen international communication and cooperation. China has getting more involved in the activities of international standards setting bodies, esp. in Codex Alimentarius Commission (CAC). Recently, China has been nominated as host for Food Additive Committee and Pesticide Residues Committee, which will facilitate more participation by China in international standards setting process.

ANNEX 3

PAPUA NEW GUINEA REPORT

APEC WORKSHOP ON FOOD SAFETY
9-10 OCTOBER 2006, Ha Noi – Viet Nam

Strengthening Food Safety Standards and Supporting Trade, Food Security and Health in Papua New Guinea

1 GENERAL INTRODUCTION:

1.1 Location

Papua New Guinea (PNG) comprises of the Eastern half of the Island of New Guinea, the largest tropical island plus an archipelago consisting of three large islands and a further 600 smaller islands and atolls. It is situated between 2 degrees to 12 degrees (Latitude) and 141 degrees to 163 degrees (longitude) in the Western Pacific Ocean north of Australia. PNG is home to over 6 million people who speak about 840 distinct languages and represent the greatest diversity of culture, and linguistics in the whole world. It shares a land border with Indonesia to the west and a maritime border with Australia towards the south. PNG has a land mass area of 475,369 square kilometers and an exclusive Economic Zone of 2, 437,480 square kilometers, thus making it one of the largest in the region and enjoys a tropical whether all year round.

PNG is recognized as one of the 17 richest nations on earth in terms of biodiversity and is a center of genetic diversity of some major tropical food crops such as banana, sugarcane and taro and has documented evidence of domesticated agriculture dating back to some 11,000 years. Its unique flora and fauna includes the largest bird wing butterfly, 5 species of tree kangaroos, almost 200 mammal species, 700 species of birds including 33 of the 38 species of the Bird of Paradise which is represented on the national emblem.

1.2 Political background

PNG became a politically independent nation 31 years ago from Australia and was colonized by a number of countries including the Dutch, Germany, Japan, England and Australia. It has a Westminster style of parliamentary democracy with a decentralized system of autonomous governments in each of the 20 provinces. The National Parliament is the highest decision making arm of the government and is represented by 109 senators elected from the 20 provinces which is again divided into 109 districts according to population and land mass. Elections are held every five years and the Prime Minister presides over the National executive Council (NEC) which has executive powers. The Head of State (Queen of England) appoints the Prime Minister on the proposal from Parliament

PNG follows democratic principles of government with checks and balances and they include the freedom of expression in the press, an independent judiciary and a ombudsman specializing in corruption investigations. Non State actors such as NGOs, landowner groups and the Council of Women and Churches play an active role in the development process.

1.3 Socio-economic background

The economy of PNG is dominated by mining, fisheries, forestry and agriculture. It has a Gross Domestic Product (GDP) of U$4.8 Billion in 2004 and Per Capita Income of US$ 765. The government has predicted a GDP growth of 3.5% in 2006 from 2.4 percent in 2005. Known recoverable oil reserves stand at 340 million barrels and natural gas reserves of 2, 660 million barrels of oil equivalent has been discovered but commercial exploitation has not yet commenced. A gas pipeline to Australia has been mooted and front end engineering studies are nearing completion.

Agriculture is considered the backbone of the country with 85% of the population dependent on it. Agriculture contributes 24% of the GDP dominated by Oil Palm, Coffee, Cocoa, Coconut, Vanilla, and Sugar. The staple food is sweet potato, taro, banana, yam, bread fruit and sago with rice emerging as the staple for most urban dwellers. This is usually supplemented by fish and other tropical fruits and vegetables which grow in abundance.

Though, the exploitation of its rich mineral wealth has created much hope for advancement, proceeds from these investments have not been translated into corresponding tangible outcomes in development and job creation. PNG still lags behind in all social indicators compared to some of its poorer Pacific island neighbors and has faired terribly in the UNDP Human Development Index (HDI). It was estimated by the World Bank that 37% of the rural population live in extreme poverty with deteriorating public services and utilities in the rural areas. Literacy averages about 65% with some provinces such as the National Capital District achieving better with 98%, whilst other least developed provinces are estimated to be about 45%.

1.4 Development Priorities.

PNGs development agenda is underpinned by the Medium Term Development Strategy (MTDS) 2005 - 2010 which identifies Health as one of the five priority areas for development spending. The others are; Education, Infrastructure development, Poverty alleviation, and HIV/AIDS. These development priorities are envisioned to be underpinned by an export driven economic recovery strategy. The establishment of Codex is seen as a crucial step in this strategy as it enhances the export of PNG made food products and agricultural commodities.

Food safety is viewed as a development issue that embraces both the public health domain and poverty reduction through increased earnings from agricultural commodities. Empirical evidence suggests that there is a direct correlation between increased agricultural commodity earnings and reduction of extreme poverty in rural settings. Current issues that call for the need to establish food safety standards are the increase in the proliferation of substandard food products and the responsibility of the government to protect its citizens from contaminated and low quality food, especially in the light of the emergence of *bio terrorism* as a serious global security threat.

Further, the *State of the Nations Health Report* of 1998 identifies an increase in the number of non communicable diseases such as diabetes, heart attacks, gout, alcoholism, obesity and hypertension among Papua New Guineans. The report declares that *"increasing urbanization and changing lifestyles have led to an increase in some non communicable disease and these threaten to further deplete the resources available for rural health care".* The increasing trend of socio economic development in the country and particularly the urban areas, in

which people are turning towards convenient foods make them particularly vulnerable to unsafe food.

PNG's situation is further aggravated by the lack of institutional capacity for enforcement and monitoring, low levels of household incomes, unhygienic food preparation, illiteracy, unsafe food preparation and sale practices by the informal sector, and a lack of awareness among the general population.

2. GOVERNMENT'S RESPONSE TO GLOBAL/REGIONAL DEVELOPMENTS IN FOOD SAFETY:

2.1 WTO and APEC Membership.

PNG recognizes that as trade in food commodities expand internationally; food safety can no longer be considered only as a domestic issue but will require harmonization with international food standards to facilitate trade. The Uruguay round of multilateral trade negotiations which resulted in the various World Trade Organization (WTO) Agreements give effect to this ethos and encourage the international harmonization of food standards among trading partners.

PNG is one of only three members of the WTO and the Asia Pacific Economic Cooperation Pact (APEC) from the South Pacific Region and has expressed its desire to take a leading role in the development of food safety standards by hosting the Regional Codex Office in PNG. PNG is also a member of the Melanesian Spearhead Group (MSG), the EU-ACP Economic Partnership Agreement, Pacific Islands Countries Trade Agreement (PICTA), the Pacific Agreement on Closer Economic Relations (PACER) and South Pacific Regional Trade and Economic Co-operation Agreement (SPARTECA)

These agreements aim to promote free trade among their members even though it is recognized that specific conditions especially those that relate to phytosanitary measures sometimes present impediments for developing countries. The promulgation of tariff barriers by countries in various disguises to protect domestic industries has been identified as important impediments to free trade by the WTO, APEC and others.

2.2 International Trade.

The PNG economy is small and consists of a small manufacturing base and exports mainly raw materials. Generally, subsistence activities are still important with the informal sector very dominant and the modern industrial sector being very small is limited in scope and scale.

Links between the industrial and manufacturing sector and enclave mining and natural resources activities are few and embryonic. PNG's wealth is based on natural resources but many are exported in an unprocessed or semi processed form. Over the years the growth of the manufacturing sector has been stagnant and continues to account for 9 percent of the GDP and constitutes 8 percent of total exports as noted in 2000.

Like most developing countries, PNG has experience difficulty in expanding exports in respond to the emergence of trade opportunities. However the problem of supply inelasticity is much more acute because of numerous problems such as narrow production base, the inherently high cost of production and transport, lack of technical know how, telecommunication and electricity infrastructure, law and order and the communalistic cultures conditioned to relay on the public sector for employment in administrative rather then entrepreneurship.

2.3 Trade Policy

Given the character of the PNG economy, the need to protect the local industry was always a paramount consideration in any policy dialogue. PNG's successful export industries have developed due to the preferential market access to New Zealand and Australia through the SPARTECA and other regional bilateral agreements such as the MSG and Lome Convention. The only sectors that have developed without such assistance are the mining and petroleum sectors.

In recent years there has been an increasing awareness that long term improvement of living standards requires a change in strategy. Reliance on benefits derived from special local circumstances and preferential market access is perceived as having a weak durability. At the same time, the widespread acceptance of the view to engage with the external economy to promote genuine

prosperity has galvanized PNG towards liberalizing its economy with the dismantling of trade barriers, deregulation and privatization.

2.4 Development Issues.

Since development cooperation issues are transversal to the APEC negotiations, it is imperative that the needs and specificities of the development of PNG and its various developmental initiatives must be singled out for assistance. This should seek among other anticipated outcomes to upgrade the overall competitiveness of the productive sectors to enable successful integration of the country into the global economy.

Assistance is sought from APEC to address the deficiency in structural reforms on the development of key economic sectors and indicators. Particular attention should focus on the process and existing problems related to the implementation of the provisions of the APEC agreement but also development assistance must try to eliminate supply side constraints such as infrastructure, human resources capacity, market access facilitation and financial capacity.

2.5 Sanitary and Phytosanitary Measures.

One of the important results of the GATT/WTO has been the agreement on the application of Sanitary and Phytosanitary (SPS) measures. SPS has been used to restrict imports despite the restriction of the arbitrary use of SPS measures to restrict trade. For PNG this presents one of the important factors for restricting the exports of its agricultural produce.

Risk assessments conducted under the SPS agreement has to be science based and SPS measures imposed by countries are to be proven on scientific grounds that the risks posed to humans and the environment are based on internationally accepted standards, guidelines and recommendations. The WTO and APEC recognize and give credence to the standards, guidelines and recommendations developed by the CODEX ALIMENTARIOUS as the accepted norm for considering food safety issues in trade.

This calls for member countries including PNG to be consistent with SPS and TBT requirements as well as with Codex standards, including the

recommendations of the Codex Committee on Food Import and Export Certification Systems.

2.6 Constraints.

Developing countries such as PNG lack technical human resources and facilities to conduct science based risk assessment procedures advocated in the WTO agreements and these present formidable challenges for compliance. It is in these areas that PNG wishes to request assistance so that countries may be able to trade on an equitable basis.

Further, PNG notes that food safety and human health protection issues dealt with under the WTO agreements give credence, recognize and cite the food safety standards, guidelines and recommendations developed by the Codex Alimentarious Commission (CAC) of the United Nations (UN) as the preferred international benchmark against which the international food trade is to be facilitated.

Unfortunately, PNG only has limited capacity to deal with risk assessment procedures as stipulated within the legal parameters of the SPS and TBT agreements in the case of a trade dispute. The request for assistance in this area to the APEC program will address this capacity inadequacy as Codex is more an issue of trade than an issue of food safety in the current PNG context.

2.7 Opportunities.

The emergence of the WTO and APEC as a powerful forum for the promotion of world trade calls for vigilance as, PNG can produce certain agricultural commodities cost effectively with comparative advantages under current environmental preconditions.

For example, PNG cattle is disease free and organic coffee, organic honey, organic vanilla and garlic can all procure premium prices on the world market. The establishment of internationally accredited food safety standards and certification systems will enhance the export of such products as they will be processed under phytosanitary systems recognized by other trading partners.

3. ESTABLISHMENT OF THE CCP AND NCC AND CODEX RELATED ACTIVITIES IN PNG.

3.1 June 2001: Loloata Workshop.

Stakeholder activities aimed at addressing food safety issues in the PNG since 2000 spearheaded by the DAL, Department of Health and others was recognized by the FAO/WHO Pacific Regional Office in June 2001 when it sponsored a national consensus workshop on Loloata Island resort entitled: "*Establishing the National Codex Committee and the Development of a National Plan of Action for Food Safety in PNG"*. The establishment of the NCC and CCP in the DAL was identified as a key output of the action plan endorsed by all the stakeholders.

An interim NCC was formed and efforts were initiated to establish the CCP and NCC in PNG. The efforts of the interim committee was rewarded when it finalized after much consultation the NEC document for the establishment of the Codex Contact Point (CCP) and the National Codex Committee (NCC) in the Department of Agriculture and Livestock (DAL).

3.2 June 2003: High Level Political Commitment.

The Minister for Agriculture and Livestock, Honorable Moses Maladina in April 2002 presented the NEC Cabinet submission on the "Establishment of the NCC and CCP in the DAL". The NEC approved the submission and resolved to implement the Codex program in PNG in June 2003.

The NEC decision compliments the National Governments export driven economic recovery strategy and food security policy. This strategy has been widely supported and owned by various sectors of the agriculture industry and food supply chain. The NEC resolution was further reinforced by the Central Agency Coordinating Committee (CACC) – (a government think-tank and advisory body) in a direction to the DAL to facilitate its implementation.

3.3 Complimentary Government Policy Interventions.

The Codex program is underpinned by the Codex/ Food Safety Policy document endorsed by the NEC and the CACC and expresses PNGs commitment to deal with food safety issues to ensure consumer protection and facilitate international

trade. The policy is consistent with a number of DAL existing policies such as the National Agriculture Development Strategy document: 2002 – 2012, the Food Security Policy and the Plant Genetic Resources Policy. Other government policies consistent with Codex include the Food sanitation Act, Biosafety Policy, the National Nutrition Policy, the National Institute of Standards & Industrial Technology (NISIT) Act, the Competition Policy and the Independent Consumer & Competition Commission (ICCC) Act.

Codex will also complement existing relevant bilateral programs and target complementary objectives for achieving socio-economic and environmental end results such as the 9th EU-ACP Economic Partnership Agreement..

3.4 Support From Multilateral Development Partners.

PNGs development agenda is underpinned by the Medium Term Development Strategy (MTDS) 2005 -2010, which espouses a policy of economic growth to be driven by an export strategy. The implementation of the Codex program gives credence, reinforces and lays the foundation for the agriculture sector to be able to produce products that are certified, meet international standards and can be exported without any impediments.

Global support for the initiative have been expressed in various forms by PNG's development partners such as the United Nations Development Program (UNDP), International Monetary Fund (IMF), World Bank (WB), Asian Development Bank (ADB), Australian Agency for International Development (AUSAID) and the EU-ACP 9th Economic Partnership Agreement.

3.5 Codex Alimentarious Assistance.

The special commitment made by the CAC for the *Dollar for Dollar* basis for providing assistance to developing countries for capacity building in Codex gives further allegiance to their commitment and for the implementation of the Codex program in PNG.

In this regard, the Government of PNG wishes to express its gratitude and appreciation to the CAC Executive Committee for providing assistance for developing countries to effectively participate and build capacity in those areas

by making available the funding of $US40 Million to be drawn down on a Dollar for Dollar Basis. PNG applauds this decision and stands ready to draw down on this facility as this would greatly enhance the operations of the CCP and assist PNGs participation in the meetings of the CAC that may affect our interests.

4. OBJECTIVES

The main purpose of establishing the NCC and the CCP in PNG is to institutionalize the harmonization of food safety standards and regulations required under the WTO to facilitate international trade and protect consumer's heath and safety. To achieve this purpose the CCP has involved and facilitated concerted and collaborative efforts of all stakeholders involved in the food industry such as the Chamber of Commerce, the Manufacturers Council, Farmers, Non Government Organizations (NGOs) Community Based Organizations (CBOs), Customary landowners, Provincial and Local Level Governments and Food Exporters.

5. ORGANIZATIONAL STRUCTURE OF THE NATIONAL CODEX COMMITTEE

5.1 Membership of the NCC.

The Codex program in PNG will be implemented by a consortium of stakeholders who will have direct input through the NCC. The NCC is comprised of the DAL as the Chair and the National Department of Health as its Deputy chair. Other members of the NCC include the Department of Trade and Industry, the Independent Consumer and Competition Commission (ICCC), National Institute of Standards and Industrial Technology (NISIT), Manufacturers Council, National Agriculture Quarantine and Inspection Authority (NAQIA), Department of Foreign Affairs, National Fisheries Authority (NFA), representatives from the academia, and nominated experts.

The DAL and Department of Health are the FAO and WHO National Focal Points respectively and have specific policy responsibilities mandated by the government to deal with food safety, food security, food standards, nutrition and compliance and monitoring.

5.2 Functions of the NCC.

The basic terms of Reference for the NCC are;

- National coordination, management and administration of all initiatives on food safety, food standards development and food safety policy.
- Provide scientific, technical and technological advice to the National Ministerial Committee on Food Security and the NEC.
- Development of a National food safety policy and to recommend appropriate processes to develop regulations, standards and guidelines.
- To develop and to adopt standards, guidelines or recommendations based on scientific evidence on foods aimed at consumer protection and promoting trade.
- Develop and implement appropriate public awareness and education programs to all sectors of the community in relation to food safety and standards.

5.3 Structure of the National Codex Committee:

The organisational structure facilitates for the participation of the public, private sector, government and NGOs (refer Fig. 1).

The establishment of the NCC provides advisory support to the CCP and ensures that all stakeholders present their views on various Codex food standards and food safety issues. The NCC basically functions as an advisory role to the government on the implications of various food standards and food control systems. It is imperative that the structural linkage of Codex through the NCC, especially to the National Food Security Committee, National Nutrition and Health Committee, the National Biotechnology and Bio-safety Committee (NBBC) and the Food Sanitation Council are provided to achieve the best possible outcome in the deliberation of food standards. Figures I and 2 depicts the NCC and its linkages.

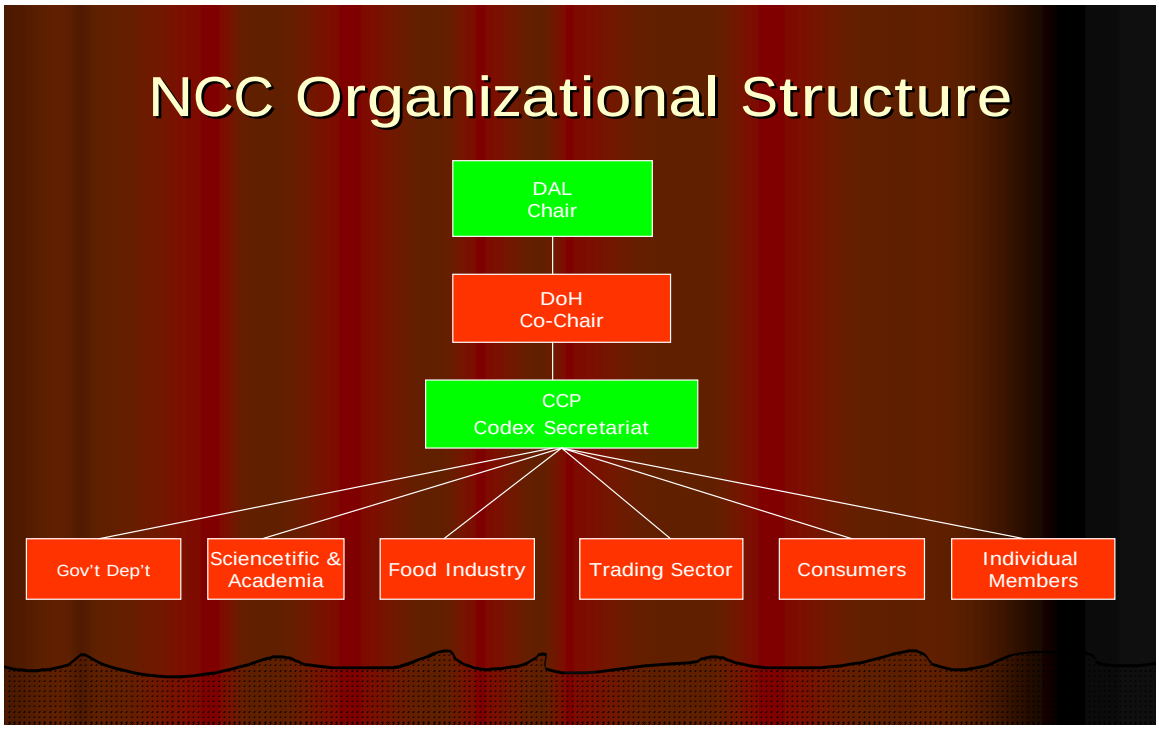


Fig. 1: **Structure of National Codex Committee**

Key: DAL - Department of Agriculture and Livestock
DoH - Department of Health
CCP - Codex Contact Point
NCC - National Codex Committee

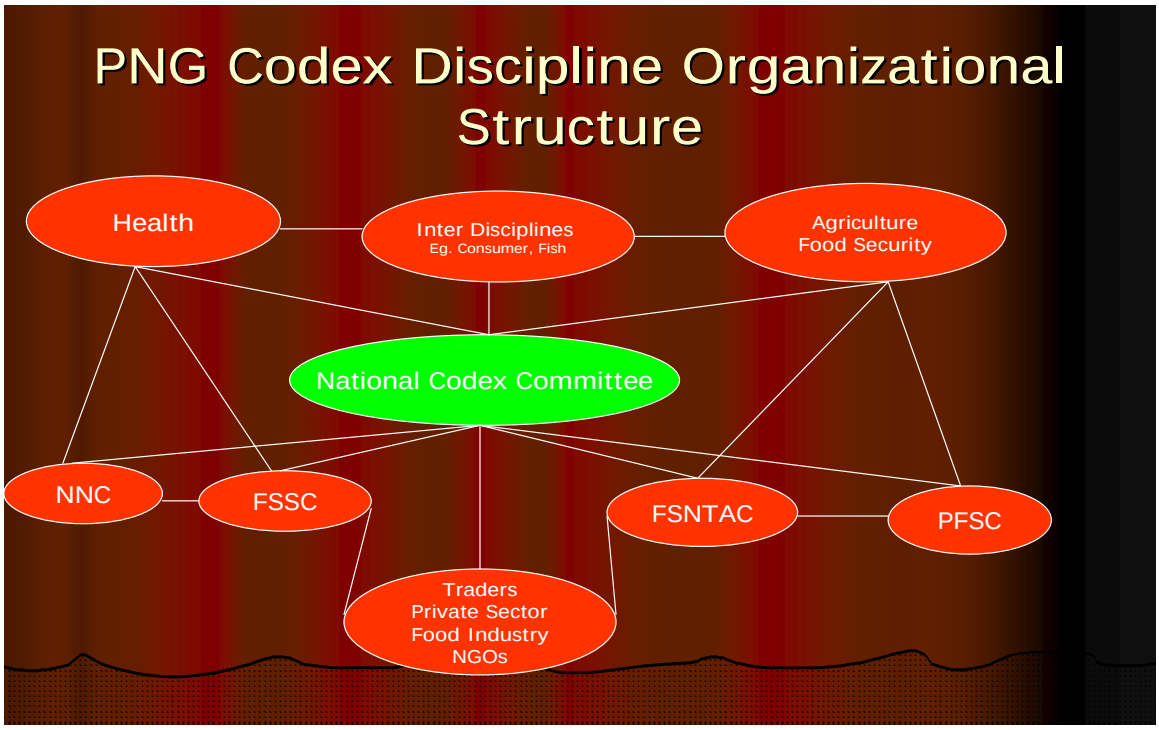


Fig 2: Food Security Organizational Structure.

Key: NNC – National Nutrition Committee
FSSC – Food Sanitation and Safety Council
FSNTAC – Food Security National Technical Advisory Committee
PFSC – Provincial Food Security Committee
NGOs – Non-Government Organizations

6. PRESENT STATUS OF FOOD SAFETY IN PNG.

The major legislation defining food safety issues in PNG is the "Food Sanitation Act of 1991". The Act is administered by the Department of Health through a Food Sanitation Council that consists of representatives from government, industry and the academia. The administration of the Act has been besieged by an absence of complementary regulations and food safety standards. A Food Safety Code introduced in 2002 is implemented by authorities though it is not mandatory. Food businesses have introduced their own food safety systems to ensure consumer protection and for meeting export standards. For example, all fisheries products aimed at the European markets are processed and audited by

a Hazard Analysis Critical Control Point (HACCP) food safety system instituted by the National Fisheries Authority in compliance with the phytosanitary standards of the European Union.

A number of companies have adopted the HACCP food safety system with a further number applying Good Manufacturing Practices (GMP) food safety and monitoring systems. These systems all comply with the PNG Food Safety Code and further are compliant with Codex standards.

Stakeholders have mooted for a review of the Food Sanitation Act of 1991, to include provisions for dealing with genetically modified food and an introduction of a food standards and regulation to accompany the Act. It is understood that a draft regulation has been submitted to the Government for endorsement. The regulations and food standards are considered crucial components to be used to improve the regulatory mechanism and establish an effective monitoring system to ensure compliance by manufacturers and processors.

Reports of deaths in remote communities and urban areas as a result of food poisoning abound but there are no effective surveillance systems to monitor and give an accurate data and food poisoning is treated at the hospitals as any other illness. Stakeholders have identified the need for PNG to train specialized technical staff in food safety surveillance, monitoring and assessment especially in the light of the emergence of genetically modified foods, irradiated food products and food-borne diseases.

7. PROPOSED PLANS OF ACTION.

After the Loloata Workshop in 2001, a **National Plan of Action** for Codex was endorsed by stakeholders to chart a way forward for PNG. As a result, the following activities were endorsed and planned for implementation to reflect the needs and interests of PNG. The following were identified as priorities for the next five years:

a) Plan and to implement the accreditation of laboratories;
b) National survey of food products developed through gene modifications, particularly suspected Genetic Modified Foods including seeds for agriculture work that are imported and consumed by the public;

c) Analysis of aflatoxin levels in peanuts;
d) Heavy metal Analysis in food e.g. Mercury, Lead, Cadmium, etc.
e) Pesticide Residues in Food Crops, especially imports and local;
f) Pesticide residue, mine tailing, antibiotic testing and monitoring plan and program for fish and fish products;
g) Fumigant Residue testing in food imported at the seaports and airports;
h) Antibiotic Residue testing in honey produced in Goroka. PNG exports honey to European Union (EU) markets, hence it is important to inform the international and local community consumers that PNG does not use any antibiotics in producing the honey;
i) Crude fat, nutrient levels including protein in the lamb flaps and other animal products;
j) Emerging food borne disease or high-risk diseases;
k) Level of histamine in fish.

   Periodical investigation of histamine level from the time of catch until cooked, identifying the significance of the histamine accumulation in PNG climate;
l) Testing of significant microorganisms, such as Salmonellas, etc. on processed poultry products and other foods and Canned Meat for Export from PNG;
m) Training of Human Resource to manage the science and technical disciplines, e.g. microbiology, Biochemistry, Nutrition, laboratory management and principles quality assurance management, etc;
n) Investigation of labeling of manufactured food products, which are sold in the wholesale and retail stores;
o) Initiate workshop on General Food Hygiene, Basic Food Hygiene Practices and Preparation, Hazard Analysis Critical Point (HACCP), etc.
p) National Dietary Exposure Assessment; and
q) Development of Food Manufacturing Registry.

8. PARTICIPATION IN MEETINGS AND REPRESENTATIONS BY THE PNG CODEX CONTACT POINT.

Papua New Guinea has attended the following international food standards and food safety meetings since year 2004 through the Codex Trust Fund:

- Codex Committee on Fish and Fishery Products;
- Codex Committee on Food Labeling;
- Codex Committee on Food Hygiene;
- Codex Committee on Food Import and Export Inspection and Certification Systems;
- Codex Committee on North America and South West Pacific; and
- PNG attended the last Biotechnology Task Force Committee Meeting in Japan, which was quite important at the high-level scientific discussions and considerations on various issues on genetic manipulation to strengthen and improve food security, food safety, and nutrition and food quality for trade.

9. RECOMMENDATIONS

PNG seeks APEC assistance to implement its Food Safety Action Plan endorsed by national stakeholders at the Loloata workshop in June 2001, specifically;

a) Human resources capacity building in the areas of assessing chemical and microbiological contaminants in foods.
b) Improvement of existing laboratories to meet the international standards and procurement of modern laboratory equipment and accessories.
c) Strengthening and equipping the operations of the National Codex Committee and Codex Contact Point.
d) Attendance and participation at Codex meetings/workshops and;
e) Making Codex more accessible to the public by conducting public awareness and consultations among the general public.

2. PNG seeks APEC assistance in building capacity to conduct risk assessment of foods derived from the use of modern biotechnology or genetically modified (GM) food specifically in the identification and exposure of GM elements in foods and feeds that may pose a risk to human health and the environment.

3. PNG seeks continuing APEC assistance towards Research and Development in the development of food policy, food safety standards and food regulations;

4. PNG seeks APEC Assistance in the establishment of a National Food Manufacturing Registry to help food industry, manufacturers, exporters, importers and policy makers to instigate appropriate policies to facilitate trade.

ANNEX 4

COMPETITIVENESS IN PERUVIAN FOOD AGRICULTURAL SUPPLY

Abstract

According to FAO, food security describes a situation in which people do not live in hunger or fear of starvation.

A direct relationship exists between food consumption levels and poverty especially in developing countries. Poverty and food security are social and economic issues, but are also at the root of many problems in Peru.

This paper pretends to show the current situation about food safety and the proposal for a competitiveness Peruvian agricultural supply towards 2011.

I. Peruvian Food Safety Situation

Poverty is a structural problem in Peru. Whether poverty is measured in terms of family income or in terms of social indicators, such as child mortality, it has been greater in Peru than would be expected on the basis of the country's average income per capita.

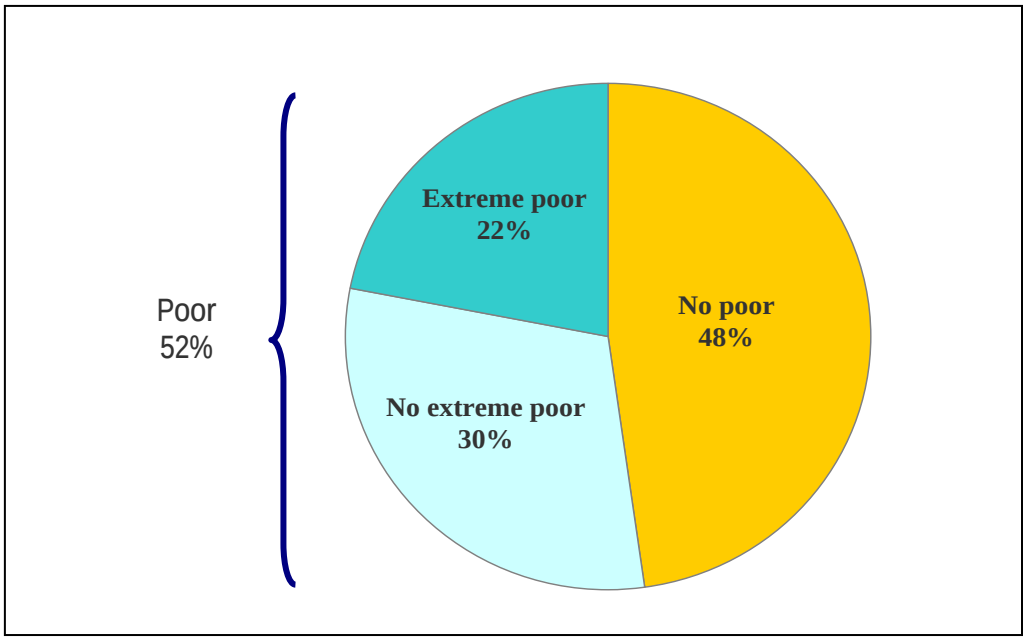
Historically, this situation has been an expression of the country's exceptionally high degree of inequality. More recently, especially in the course of the 1980s, it increased even more than in the other major Latin American countries, chiefly because of the drastic deterioration of the economy's overall performance.

Measures of poverty based on family income are, of course, dependent on the particular income level chosen as a dividing line between the poor and the non-poor.

A comprehensive analysis of poverty in Peru for 2003 using Peruvian national surveys concluded that fully 52 percent of Peruvian families were below the poverty line and 22 percent were below the destitution level an only 48 per cent of the total families were below the no poor level.

A recent ECLAC[2] study provides new estimates of the incidence of poverty for Latin America and show the average in poverty is around 43 percent and 18 percent in destitution.

Graph No 1 Peru's Levels of Poverty



Source: Household National Survey 2003. (ENAHO 2003)

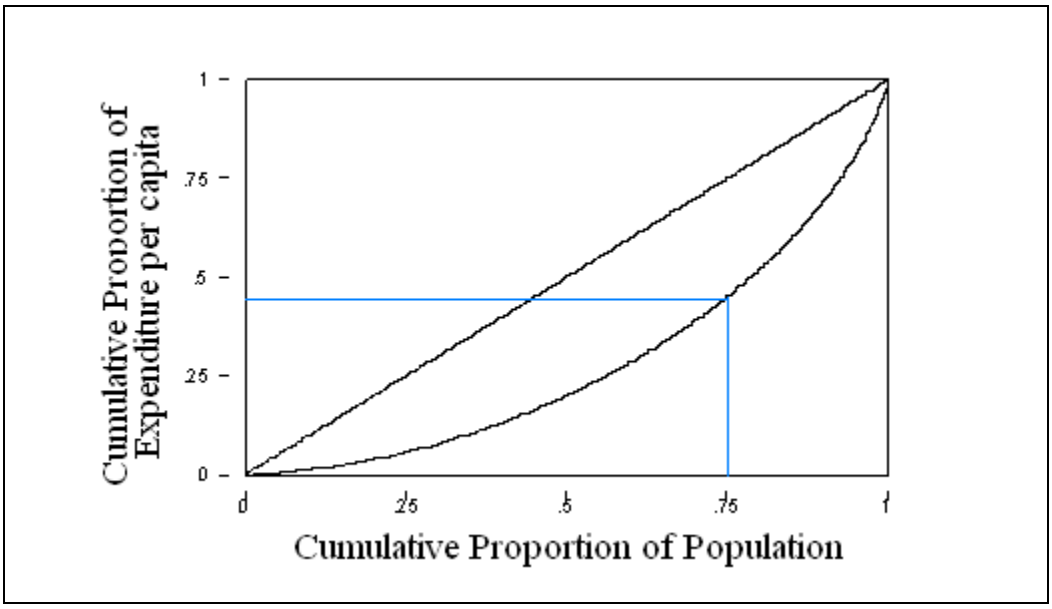
The high levels of inequality typically observed in the Peru like in other countries in Latin America pose a serious threat to recent development undertakings, not only because inequalities may seriously undermine efforts to eliminate poverty and destitution, but also because persistent inequalities waste financial and human resources, erode social cohesion and, consequently, pose serious constraints to the process of social and economic development.

Structure and dynamic of labor market is of great significance to the problematic nature of poverty. The processes of industrialization, economic growth and modernization were accompanied by notorious unemployment, under productivity and discontinuity.

[2] Economic Commission for Latin America and the Caribbean

All the social indices in Peru hide great differences between socioeconomic groups, as much in urban areas as rural and this means the great inequality.

Graph No 2 Peru's Lorenz Curve



Source: Household National Survey 2003. (ENAHO 2003)

The Lorenz Curve is the most accepted way to demonstrate the inequality in a country. In Lorenz Curve representations, less inequality means a less pronounced convexity.

The Gini coefficient is derivated from the Lorenz Curve and is a measure of inequality on a scale of 0 (low inequality) to 1.0 (high inequality).

For Peru, the Gini coefficient is equal to 0.44 and that means great inequality in the income distribution.

In Peru, as in the rest of Latin America, the incidence of poverty and destitution was much higher for rural than for urban families. Fully 76 percent of rural

families were below the poverty line, compared with 24 percent of urban families[3].

The main problem of food security in Peru takes place by the side of the access: low income levels and the inadequate food useful on the part of the population.

Around 25% of children less than 5 years old are affected by chronic starvation (approximately 700 thousand children) and 50% suffers of anemia and 11% manifest sub clinical deficiency of vitamin A.

The 35% of children less than 5 years old who live in extremely poverty suffer of chronic starvation in compare with the 13% of the children who are not poor.

Table No 1 Peru's Caloric Poverty[4]

	1998	1999	2000	2001	2002
Caloric Poverty - Individuals (%)	22.3	26.7	29.0	32.8	36.3
Caloric poverty by gender (%)					
Men	23.2	27.5	30.2	34.0	37.1
Women	21.5	25.9	27.8	31.6	35.6
Total	22.3	26.7	29.0	32.8	36.3
Caloric Poverty by age range (%)					
Between 0 and 5 years old	24.3	27.5	30.4	35.3	39.6
Between 6 and 15 years old	26.6	32.6	35.9	39.7	43.1
Between 16 and 35 years old	23.0	25.0	29.9	32.6	38.3
Between 26 and 65 years old	19.5	24.1	25.6	29.5	32.5
More than 65 years old	15.7	22.3	18.4	23.0	24.0
Total	22.3	26.7	29.0	32.8	36.3
Average available calories per capita					
Not caloric poor	3626	3468	3203	3245	3160
Caloric poor	1616	1663	1701	1653	1670

Source: Gallegos, J. and P. Lavado (2005)

The demand for calories (quantified for the side of the expenditure in food per family) decreased a 17,8 percent between 1998 and 2002.

[3] On basis ENAHO 2003 (Household National Survey 2003)
[4] Taking from Gallegos, J. and P. Lavado. (2005). "Calories demand in Peruvian households and the impact in individual productivity in the labour market". CIES.

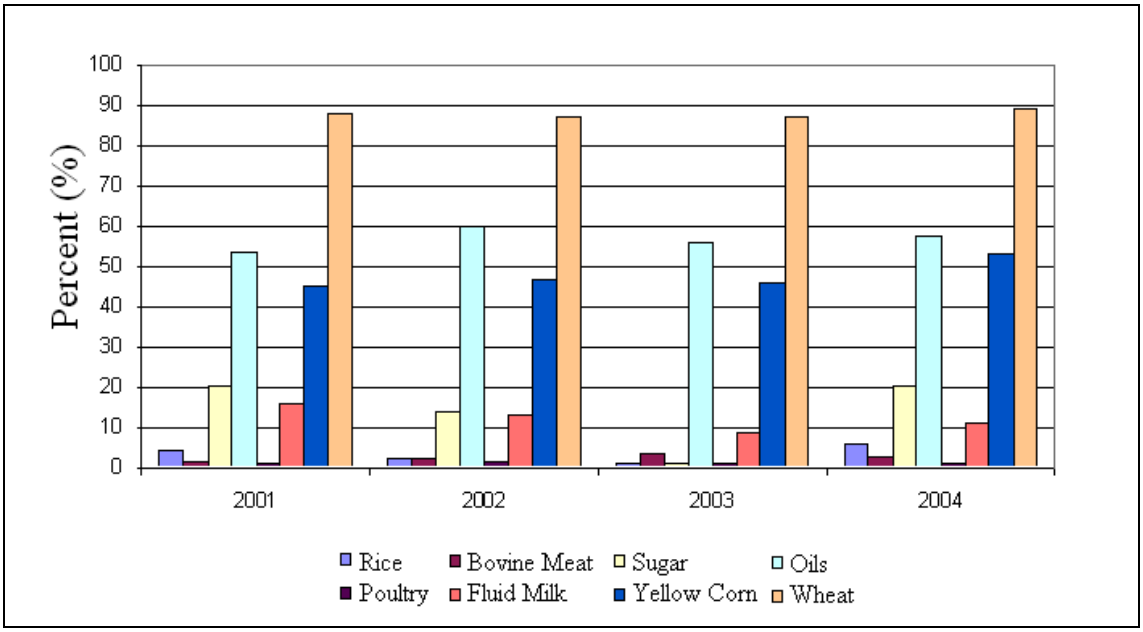
According to Table No 1, the proportion of individuals that cannot cover their caloric necessities increased from 22,3 percent to 36,3 percent between 1998 and 2002.

II. Proposal for a Competitive Food Agricultural Supply

All countries use imports to varying extents to satisfy the quantity and diversity of the food demands of their populations; for poor countries where food imports are a large share of a country's total trade, food security is conditioned by the capacity to obtain food through imports.

Peru is an importer of some important dietary components like wheat, oils, corn and rice and that shows the relevancy to propose internal policies to improve Peruvian agriculture.

Graph No 3 Food import dependency in Peru

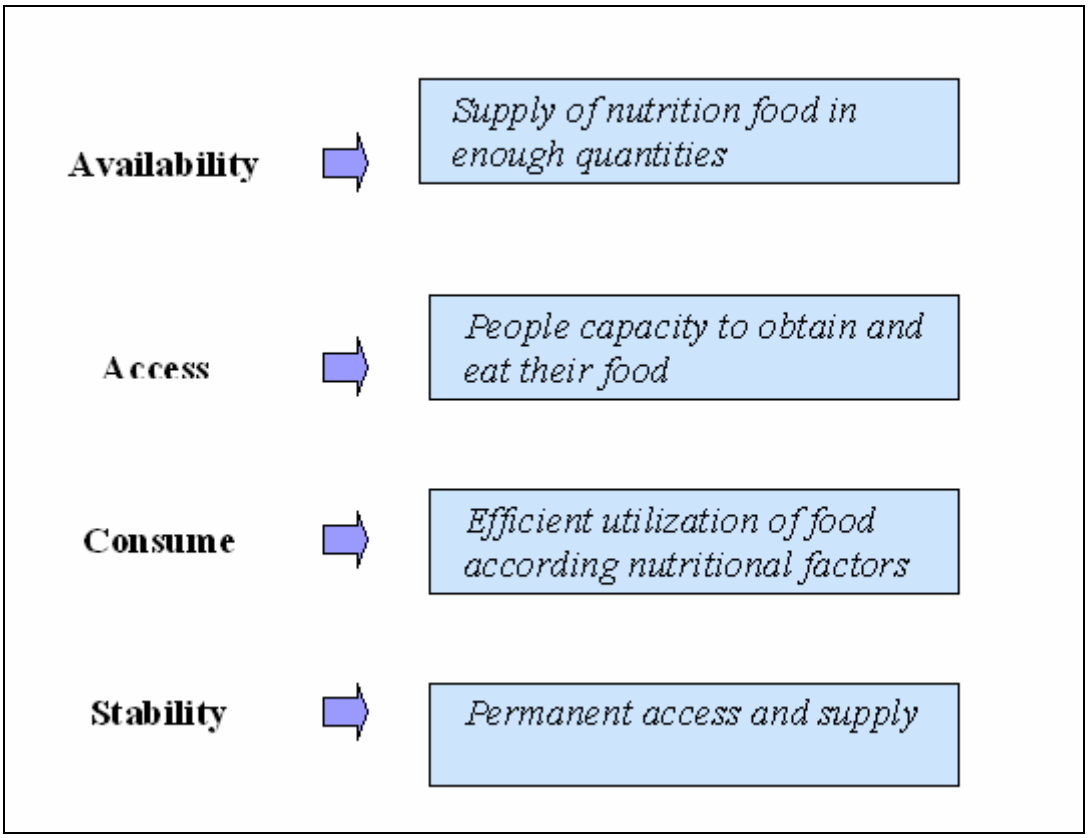


Source: Ministry of Agriculture of Peru

The Ministry of Agriculture of Peru pretends looking ahead 2011; obtain a competitive agricultural sector.

For this reason is completely necessary make a strategy and identify clear objectives defining, at the first, the meaning of food safety in the Peruvian economy.

Diagram No 1 Peruvian Food Safety concept



Source: Ministry of Agriculture of Peru

The Peruvian strategy consists to offer better conditions in availability, access, use and food stability, to guarantee a food and nutritional safety for Peruvian population, and prioritize the vulnerable groups and extreme poor population.

Is necessary work in four areas:

- Agricultural modernization
- Responsible use of natural resources and biodiversity
- Rural development
- Institutional modernization

Agricultural modernization implies an increment of agricultural exports, the target is increase them from US$ 1500 millions to US$ 3500 and also implies an increment of agro industry production around 4,2% per year.

Responsible use of natural resources and biodiversity means a reforestation in 500 mil hectares, a recovery of 140 mil hectares in degraded areas, and also means an efficient use of water with better techniques of irrigation.

Rural development pretends improve active participation between internal sectors like education, health, infrastructure, regional governments and non government community.

Institutional modernization proposes decentralization of all the functions of the Ministry of Agriculture and an immediately internal reform in order to guarantee a better distribution of financial resources.

III. Conclusions

Presently, the Peruvian food insecurity problem is a result of an inequitable distribution of and access to resources (such as land, credit, information and incentive), rather than a problem of global food production.

As a result, there is a concentration of production in certain regions and in the hands of fewer and fewer intensive producers, to the detriment of the other regions, small scale farmers and local food security.

The problems of dependency on food import and food aid include political conditionality, vulnerability to a failure of delivery mechanisms, disincentive to local producers due to decreased food prices, competition with local traditional foods and changed consumption patterns.

Food security is a basic human right. Every person must be assured access to safe, high quality food. To ensure the right of people to feed themselves, food security must be based, to the extent possible, on local self reliance.

Food security is best assured where the production, transporting and consumption of local food is a priority and where dependence on food imports is reduced as much as possible, acknowledging that food imports can be necessary to supplement local supplies.
For that reasons, Peru develop a strategy for sustainable food agricultural supply. Advocate for food security is a central objective in the Peruvian agricultural and food policies of local and national governments, intergovernmental agencies, NGOs and community groups.

The Ministry of Agriculture are going to work inside agricultural communities to ensure the viability of small and family farms and the diversity of products and production practices.

Now, nutrition and food safety has a high priority in Peru and the Ministry of Agriculture has been undertaking numerous actions to consolidate the Peruvian food safety systems in order to benefit all population from Peruvian food production capabilities.

ANNEX 5

FOOD SAFETY IN THE PHILIPPINES – CURRENT SITUATION AND SOLUTIONS

Joeve Siapno Calleja
Senior Science Research Specialist
Bureau of Agriculture and Fisheries Product Standards
Department of Agriculture, Philippines

Food safety and quality systems are essential in protection of consumers against health risks and in enhancing trade. The implementation to ensure food safety involves a collaborative and orchestrated effort, not only on the part of the competent regulatory authorities and academic institutions, but also largely depends on the industry's initiatives. The current farm-to-fork model of food safety entails an integrated, multi-disciplinary approach in the management of food safety systems throughout the food chain – harvesting, production, as well as verification and auditing procedures should be closely monitored, a clear departure from the traditional food safety regulations where end-product verification is of primary interest.

As a nation with almost 85M population, the Philippines continually endeavor to adopt the highest level of food safety in terms of legislation, infrastructure support and capacity building. In fact, the country has several national laws pertinent to food safety, namely:

- The Food, Drugs and Cosmetic Act – Republic Act No. 3720

  RA 3720 has the basic provisions of ensuring safe and good quality supply of food, and regulates the production, sale and traffic of the same to protect the health of the people. The Bureau of Food and Drug was thereby established to set the standards for food and adopt measures to ensure pure and safe supply of food.

- The Consumer Act of the Philippines – Republic Act No. 7934

  The Consumer Act of the Philippines was established in 1993. The aim of RA 7934 is to develop and provide safety and quality standards for

consumer products and to undertake research on quality improvement of products and investigate causes and prevention of product-related death, illnesses and injuries.

Provisions in the Act include sections on:

- Adulterated Food (Article 23)
- Regulations on Unprocessed Food (Article 24)
- Tolerance for Poisonous Ingredients in Food (Article 25)
- Unsafe Food Additives, Exceptions for Conformity with Regulations (Article 28)
- Petition for Regulation of Food Additive (Article 27)

- The Code of Sanitation of the Philippines – Presidential Decree 856
  Presidential Decree 856 was effected in 1995. The code provide for sanitation requirements for operating a food establishment.

- The Agriculture and Fisheries Modernization Act of 1997 – RA 8453
  AFMA prescribes that sectors involved in the production, processing, distribution and marketing of food and non-food agricultural products shall adhere to and implement the use of product standards in order to ensure consumer safety and promote the competitiveness of agriculture and fisheries products.

- The Philippine Fisheries Code of 1998 – RA 8550
  The Philippine Fisheries Code was responsible for transforming the Bureau of Fisheries and Aquatic Resources (BFAR) into a line bureau. It was organized to advise and coordinate with the local government units (LGUs) on the maintenance and proper sanitation and hygienic practices in fish markets and fish landing areas.

The Philippine Government, by enactment of the above laws, is deeply committed in addressing food safety and security issues in the country. However, further moves to strengthen and improve certification and monitoring systems are essential in coping with the trends and changes in the domestic and international markets.

Similarly, the global expansion of trade has brought into sharper focus the divergence among countries' food safety regulations and standards. These

variations in the regulations and standards between importing and exporting countries cause friction and even disputes that impede international trade. Countries, however, are attempting to build common ground for such regulations by learning from each other's successes and failures in managing food safety.

In the Philippines for example, regulatory agencies are well aware of the urgent need to harmonize its standards wit the universally accepted standards in order to make the Philippine products achieve international acceptance (De Leon, 2001). Functions of food standardization are shared by the Department of Health (DOH) and the Department of Agriculture (DA). RA 3720 created the Food and Drug Administration (which was later changed by Executive Order 851 to the Bureau of Food and Drugs). This Act gave BFAD powers to set standards of identity, purity, quality and fill of container in relation to food. While the powers conferred on BFAD appear to be wide ranging, in practice this Agency confines its activities to tertiary food products (Mc Murray, 2006).

The joint powers between the DA and DOH and the Department of Trade and Industry (DTI) are explicitly cited in the Consumer Act of the Philippines. The DA was to be responsible of products related to Agriculture, the DOH for food and drugs, and the DTI to other consumer products not allocated to the other two Departments. For the DA, the task of carrying out the provisions of the Consumer Act were delegated to its Bureaus and Attached agencies. The Bureau of Plant Industry (BPI), Bureau of Animal Industry, (BAI), Bureau of Fisheries and Aquatic Resources (BFAR), Bureau of Agriculture and Fisheries Product Standards (BAFPS) are the bureaus responsible for the regulation, monitoring, and ensuring food safety and consumer protection in agricultural and fisheries products. Attached agencies like the Fertilizer and Pesticide Authority, National Meat Inspection Commission, National Food Authority, Philippine Coconut Authority, and other attached agencies of the DA are also engaged in food safety activities for the Department.

1. Bureau of Plant Industry (BPI)
   The BPI has the primary task of promoting the development of plant industries through research and development, crop production and protection and effective technology promotion and transfer.

As created through series of laws, Executive and Administrative Orders, other functions of BPI with bearing on the safety and quality of plants and food crops are:

- protection of agricultural crops from pests and diseases
- recommend plant quarantine policies and prescribe rules and regulations for the prevention, control and eradication of pests, diseases and injuries to plants and plant products;
- prevent the introduction of exotic pests in the country and prevent further spread of plant pests already existing from infested to pest-free areas and to enforce Phytosanitary measures for the export of plants, plant products and regulated articles (i.e GMOs);
- establish pesticide laboratories all over the country to monitor levels of pesticide residue in crops in order to protect the local and international consumers from possible health hazards and to generate data for the establishment of MRLs;
- Perform technical analyses on formulated pesticide products;
- Ensure safe supply of fresh agricultural crops and improve the quality of local fresh agricultural crops and promote its exports;
- Monitor the level of chemical residues of agricultural crops and recommend policies for safety of consumers, and
- Promote use of organic fertilizer and Integrated Pest Management

2. Bureau of Fisheries and Aquatic Resources (BFAR)

The following regulatory functions of BFAR is executed by the Fisheries Post-Harvest Division (FPHTD):

- conduct inspection, monitoring and verification of fish processing plants and fish and fishery products for export and import;
- conduct inspection of processing plants for domestic consumption, marketing and fishing port complex;
- conduct physical, chemical and microbiological analysis of fishery products in support of export and import;
- issues commodity clearance and other requirements for fish and fishery products

3. Fertilizer and Pesticide Authority (FPA)

   Another attached agency of the DA is the FPA, created through the issuance of P.D. 114. The agency is mandated to protect the public from risks inherent in the use of pesticides and educate the agricultural sector in the used of these inputs.

4. National Meat Inspection Service (NMIS)

   The NMIS' functions are similar to the Bureau of Animal Industry, the only difference is the area of coverage (slaughtered animals), which includes inspection of slaughterhouses.

   NMIS offers four services linked with its regulatory functions:

   - Meat Laboratory Services
   - In-plant Operation and Inspection Service
   - Regulatory services
   - Meat Import/Export Services

5. Bureau of Animal Industry (BAI)

   BAI is at the forefront of ensuring animal health, as well as the food safety and quality of animal and animal by-products. Its chief directives include the following:

   - regulate animal feeds, feed ingredients, and veterinary products;
   - prevent, control, contain and eradicate communicable animal diseases;
   - regulate the flow of animal/animal products;
   - provide laboratory support to other divisions through production of biologics and pharmaceuticals, quality control testing, feeds and feed stuff analyses, and drug assays;
   - regulate the movement of animals and animal products through the issuance of Veterinary Quarantine Clearance and other permits

6. Bureau of Agriculture and Fisheries Product Standards(BAFPS)

   The BAFPS is mandated to formulate and enforce standards of quality that will ensure human, animal and plant health and safety, environmental protection, competitiveness and efficiency in the marketing and trade of agriculture, livestock and fisheries and aquaculture products.

Strategies in ensuring the effectiveness of food safety systems could be: 1) appeal to an individual's moral sense and ethics, 2) economical incentives, 3) education and communication, 4) regulatory procedures including guidance, recommendation and legal action with penal regulations. (FAO, 2002)

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ANNEX 6

FOOD SAFETY - CURRENT SITUATION AND SOLUTIONS IN CHINESE TAIPEI

Ching-Jung Chang
Specialist of Food Industry Division
Agriculture and Food Agency, Council of Agriculture, Executive Yuan,
Chinese Taipei

I. Introduction

Located in subtropical and tropical area, Chinese Taipei has warm and humid climate that is suitable for the occurrence of insect pests and plant diseases. Farmers in Chinese Taipei are used to controlling pests and diseases with chemicals. Accompanying Chinese Taipei's rapid economic development and major improvement in the standard of living, the consumers have started paying more attention to request for higher quality and more variety on fresh foods. Food safety issue is highly concerned after the event of Bovine Spongiform Encephalopathy (BSE, or namely mad cow disease) in the past few years. And pest control, contaminations of heavy metals and the application of microorganism issues have been more frequently discussed and perceived public awareness on food safety and ecological balance in Chinese Taipei. (Lur, 2005)

Therefore, Chinese Taipei implemented food safety ensuring system many years ago. The current monitoring system mainly counts on consumer volunteers assisting Chinese Taipei to examine the quality of the food in the marketplace. The traceability system is an emerging system, which may be concerned as a more effective and efficient system for Chinese Taipei authority and the public sector to monitor food safety.

To construct the agricultural products and food safety ensuring system, Chinese Taipei (the Council of Agriculture, COA) promotes the concept of agricultural chemicals applying properly to farmers, the pesticides and fungicides residues inspect post harvests, and promote the Good Agricultural Practice (GAP) verification system. For the development of organic agricultural industry, COA has provided guidance to the accreditation organizations for inspection and

issued certificates of organic agricultural products through standardized operation procedures. COA also promotes the utilization of a common identification label among all organic agricultural products, which would be easily recognized by the consumers.

II. The food safety implementing strategy in Chinese Taipei

i. Plant Pest and Disease Monitoring system

Although the use of pesticides is unavoidable, such a high amount of pesticide application not only wasted money but also caused a lot of problems including chemical residue in foods, environmental pollution and adverse effects on ecosystem. Bureau of Animal and Plant Inspection and Quarantine (BAPHIQ), of the COA, sets up to strengthen the monitoring and active alarming of diseases and pests: With the integration of the agricultural research and extensions over the entire economy, BAPHIQ established 8 regional diseases monitoring centers to perform the active investigation and monitoring work, with special focus on 39 important diseases and pests. These centers will keep the authorities informed of the current status of diseases in the economy and properly set off alarms for diseases and pests of plants.

ii. Sanitation and Safety Control of Agriculture Food

Chinese Taipei has established a complete control system to monitor and test chemical residues on agricultural products. COA is in charge of the process before products go on the market and the Department of Health takes over once the products are marketed (including imported items).

To ensure that chemical residue monitoring becomes a full scale practice and that the results are sufficiently representative, the Agriculture and Food Agency (AFA) and the Chinese Taipei Agricultural Chemicals and Toxic Substances Research Institute (TACTRI) of the COA, and various corresponding offices in county and city authorities conduct annual consultations to produce a plan for the crop types, areas, sample numbers, and division of sampling work. Inspection is conducted by TACTRI and its regional offices by means of chemical tests according to regulations. All disqualified cases are immediately placed under the ruling county or city authority's control, which entails notifying farmers to delay the harvest, implementing and tracking education and counseling, sending them

to disciplinary classes, recording interviews with them, requesting them to sign an affidavit, continuing random checks, and imposing a NT$15,000 to 75,000 fine according to the Agricultural Chemical Control Law. COA announces information on disqualified farmers to the public every month to stop below-standard fruits and vegetables from going on the market. The purpose is to apply control at the source.

In 2005, 11,695 vegetable, fruit, and tea items were inspected for chemical residues. Out of these, 11,358 passed the test, accounting for 97.12% of the total. Out of 700 rice samples, 94.5% of them qualified. Forty cases were disqualified and given a total of NT$600,000 in fines. The Chinese Taipei Agricultural Research Institute also assisted farmers' associations, cooperatives, etc., to perform quick biochemical tests on 199,436 fruit and vegetable items before they were marketed. This helped farmers inspect the chemical residues on their products, educated them to keep track of the amounts of chemicals used, and served as a reference for the safe harvest time.

In the area of heavy metal contamination, inspection of rice paddies suspected of contamination by cadmium, mercury, and lead is conducted every year. In 2005, 207 tests were performed, of which two cases totaling 0.61 hectares of rice were over legal standards and 2,620 kg of rice was destroyed. In addition, 11.77 hectares of farmland was found by environmental protection agents to be containing heavy metals over the legal criteria. As a result, 38 tons of crops were removed to prevent them from entering the market.

iii. GAP label certification system

COA has adopted the concepts of good agriculture practice (GAP) since the 1980s, and applied related practice managements in several crops mainly fruits and vegetables (Lur, 2005). The formal GAP logo (Figure 1.) was registered in 1993 and trademarked in 2003. The certification system has been implementing since 1994. The label-certification is in charged and managed by AFA, TACTRI verified the products, and then certificated by the city or county authority.

Figure 1. The GAP logo in Chinese Taipei (1994-2005, replaced by Fig.3 from 2006)

In the logo, two green leaves mean agriculture, and three circles refer to suitable planting time, location and genotype; reasonable pest management; and appropriate timing of harvest. There is additional meaning of the three circles, representing assistance of compliance, inspection and enforce regulation.

More than 10 years of extension, over 1,726 farmer groups of total 4,341 (39%) have participated the GAP logo program. (Table 1) The GAP fruit harvest areas of 1,013 farmer groups are almost 18 thousand hectares in 2005. The production is over 350 thousand tons. Over 11 % of total fruits production are included. The GAP vegetables harvest areas of 713 farmer groups are more than 7 thousand hectares. The production is over 220 thousand tons. Over 8 % of total fruits production is included.

COA assists over 295 supermarkets to set up the GAP special area to sell the GAP products. According to COA's survey, the GAP vegetables' average price is 56% higher than regular growth in the wholesale market. (Huang, 2005) The consumer has the willingness to pay 39% more to buy GAP vegetables. (Wang, 1995)

iv. Organic farming

Organic agriculture has developed rapidly worldwide during the last few years. It is now practiced in approximately 110 countries of the world. Chinese Taipei has taken a keen interest in supporting the organic sector. With the rules established by COA, the organic sector has been able to provide a safety guarantee to consumers that the organic products using the new label mean that specific

practices were followed. Due to the increasing on organic products in the Chinese Taipei outlets, the number of certification agencies accredited by AFA of the COA, has grown.

Figure 2. The organic agriculture certification labels in Chinese Taipei. (Replaced by Fig.3 from 2006)

There are three certification agencies accredit by COA in 2005. They are MOA, Chinese Taipei Organic Production Association (TOPA), and Tse-Xin Organic Agricultural Foundation (TOAF). Their certification labels are illustrated in figure 4. The 4th label is different from the 3rd. It is a label of organic quasi-products in the organic turning period.

The changes of organic areas from 1996 to 2005 are accounted in Table 3. By the end of 2005, 1,335 hectares of farmland for organic agricultural production had been certified, including 697 hectares for rice, 343 hectares for vegetables, 152 hectares for fruit, 72 hectares for tea and 71 hectares for other crops. The number of farms is more than 952.

On the domestic market, organic products received a substantial price premium over that of conventionally grown products. The consumer has the willingness to

pay 90% more to buy the organic vegetables. (Chen, 1996) The willingness to pay increase is more obvious.

v. Label integrate

To avoid the confusion from consumers and general public, COA decided to merge all related logos into one logo as shown below (Figure 3). The work began on 1 Jan. 2006. The Chinese characters in the logo mean 'Good Garden (Good Agriculture Practice) fresh vegetables and fruits' refer to the GAP system, and CAS refers to 'Certified Agriculture Standards'. There are little differences in the Chinese meanings of the logo in different certification system. The second is 'Organic agricultural product' refers to the organic certification system. The certification system will cover all agriculture products, including crops, animals, fisheries, and processing food.

Figure3. The common logo for good agricultural products (from 2006)

COA not only begins to construct the agricultural fresh products traceability system in order to improve the productive information transparency and the consumer's trust but also started to draft an "Agricultural products growth and verification act" to improve the food safety ensuring system recently.

vi. The traceability system

COA began to collect the data of the traceability system in Japan and EU in 2003, and then planed and promoted the agricultural traceability demo program in 2004. (Lee, 2005) Generally speaking, traceability is not a new term for

farmers of Chinese Taipei. Some farmers keep their records in the cultivating processes regularly. The main objectives of keeping those records are to improve their management efficiency, growing technique and profits. (Lur, 2005)

In order to integrate complex components of the traceability system, COA established a core structure, nam-ed Chinese Taipei Agriculture and Food Traceability System (TAFTS). The system connects databases from farmers, farmer groups, inspectors, agricultural processors, supply chains, and consumers. The system has been opened to public recently. Results as follow:

A. Completed the establishment of standard operation process (SOP) of 64 items of agricultural products (including 13 organic) such as rice, tea, chicken, …etc.

B. Launched the Chinese Taipei agricultural product traceability information web (http://taft.coa.gov.tw) as well as the agricultural production and consumption communication flat-top (http://kmintra.coa.gov.tw) in Chinese, and Japanese.

C. Build the EAN128 international barcode printing system and set up the EAN128 international barcode information system in 37 models.

D. Set up the inquiring system at 8 TAFTS products retailing stores such as Taipei 101 and Taye Takaya Jason's supermarkets.

E. Choice 268 GAP or organic farm groups to record the productive history.

III. The challenge in the future

An ex ante quality verification and ex post traceability systems is used to demonstrate the different functions and double verify the safety ensuring system. But they are quite different issues. GAP is a basic system to assure food safety of cultivated practice management. And traceability is an indispensable system to communicate food safety information to both trader and consumers.

Traceability system is still in its infancy in Chinese Taipei. There is still much to do in the system. Offering the correct and most needed information to the consumer has to be explored constantly. It is urgent for the system to be compatible with the developed countries, such as EUREPGAP, Japan, or US-GAP for international trade.

Tables

Table 1. The rate of join in GAP certification system Date: 30 Nov. 2005

Item	Vegetables			Fruits			Total		
	GAP	All	%	GAP	All	%	GAP	All	%
Farmer groups	713	2,019	35	1,013	2,322	43	1,726	4,341	39
Farmers in groups	10,055	37,904	26	14,729	48,090	29	24,334	85,994	28
Area in groups	7,348	43,742	16	17,941	80,331	22	25,319	124,073	20
Areas	7,348	135,544	5	17,941	176,004	10	25,319	311,548	8
Product	220,400	2,563,456	8	351,772	2,981,232	11	572,172	5,544,688	10

Source: Agriculture and Food Agency, COA

Table 2. The number change of GAP farmer groups from 1994 to 2005

Year	Vegetables	Fruits	Total
1994	30	0	30
1995	59	23	82
1996	77	66	143
1997	103	161	264
1998	211	314	525
1999	379	425	804
2000	441	635	1,076
2001	471	718	1,189
2002	520	799	1,519
2003	568	872	1,440
2004	620	1,025	1,645
2005	713	1,013	1,726

Source: Agriculture and Food Agency, COA

Table 3. The changes of organic area in Chinese Taipei

Year	Paddy rice	Veg.	Fruit	Tea	Other	Total
1996	62	26	67	5	-	160
1997	238	43	100	16	-	397
1998	302	98	156	22	-	578
1999	466	170	157	22	5	821
2000	596	154	209	37	17	1,013
2001	493	171	159	56	19	898
2002	609	174	188	55	22	1,048
2003	600	228	159	63	43	1,092
2004	744	232	153	76	41	1,246
2005	**697**	**343**	**152**	**72**	**71**	**1,335**

Source: Agriculture and Food Agency, COA

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ANNEX 7

FOOD SAFETY – CURRENT SITUATION AND SOLUTION THAILAND

Introduction

Food safety has increasingly been of great concern among the international community for the past few years. It is also world of free trade with no boundary where consumers have access to the same types of goods from any part of the globe. Therefore competition is intense, complex and tough. As the countries rush to look after health of their consumers as well as to protect the well - being of their domestic procedures , non – tariff measures or NTMs have been widely used on the protect of consumer protection. Food safety, which is one form of Non Tariff Barrier to Trade has become an important agenda raised for widely discussion.

Particularly in Thailand , the issue of food safety has currently caught major attention from the government sector, academics, and exporters. The government of Thailand is aware that the country is one of the world major food and agricultural product producers and exporters and therefore determines in making its country to be renowned for Thai food standards and food safety by initiating of a project called “Kitchen of the World” as there are abundance of natural resources. To reach the ultimate goal, Thailand as kitchen of the world, the government announced the campaign “Food Safety Year 2004” along with more efforts that have been put into the learning process development. This project was initiated to ensure consumers, not only within domestic, but also within the international arena, are guaranteed as to the safety and genuine quality throughout the Thai food chain.

Thailand Food Safety System

Prior to 2004, Thailand food safety regulations involved with four governmental agencies (Ministry of Public health, Ministry of Commerce, Ministry of Industry and Ministry of Agriculture and Cooperatives). Consequently, administrative proceedings on food safety were perceived as rather confused and repetitive at both policy management and operation level. To reach the commitment of food safety, the review of food regulation system was initiated in 2001. Thailand has

reconstructed the public sector into an integrated agency. By this, the Ministry of Public Health is in charge of imported agricultural and food commodities with an exception on shrimp, tuna and meat products imported as raw material. Alternatively, the Ministry of Agriculture and Cooperatives is responsible for exported agricultural and food commodities covering resources, manufacturing process through finished goods that are to be exported.

On October 9, 2002 the National Bureau of Agricultural Commodity and Food Standards (ACFS) was established under supervision of the Ministry of Agriculture and Cooperatives to act as the mainstream for maintaining food safety and a focal point in certifying the standards for agricultural and food commodities for exports in order to ensure fair practice and recognition both locally and internationally. The mission of ACFS is as follows :

1. To develop Standards and process for production of agricultural commodities and food products
2. To inspect and certify product standards of farm – level production and processing stages as well as to authorize both public and private agencies to certify the standards for agricultural produces and food products for exports.
3. To monitor and evaluate on-going program and measures on food safety
4. To engage in international negotiations on technical aspects both at
5. bilateral and multilateral level together with international organizations to ensure fairness of the use of Non- Tariffs Barriers (NTBs)
6. To functions as the Central Information Center and Traceability on food standards and standards of agricultural Commodities.

According to the National Agenda through the cabinet resolution of 4 March 2003, Thailand's Kitchen of the World strategy and Food Safety Year 2004 , Road Map of food safety was established to be the strategy of country in order to achieve the goal to clearly identify each relevant agency of duties and premises to food safety, especially the two most important agencies: Ministry of Public health and Ministry of Agriculture and Cooperatives.

Road Map of Food Safety is composed of main 5 strategies; (I) import imput control, (II) develop farm and manufacturing standard, (III) develop and certify manufacturing, (IV) inspect and certify export commodity, and (V) negotiation on

technical problem – solving, to ensure Thailand must have an effective control system (from farm to table) and Thai agricultural and food product must be acceptable and conform to international community and standards. However, traceability is another important measure which has been developed for effective function of the competent authorities. Prompt action is very much in needs when the food safety issues arise.

Current situation and solution

In principle, the Thai Food safety regulation are drafted in congruence to international standards such as Codex Alimentarius, Office International des Epizooties and IPPC. However, in the case of goods with no reference to any international standards or goods with risk assessment, Thailand is able to formulate its own standards in line with scientific data. Thailand is aware of how important food safety issues could be; hence, the process of drafting standards and regulations are treated with prudence as to ensure the trading partners that such standards and regulations are non obstacle to trade.

Agricultural commodity and food standards are used as references for manufacturing, trade, exports and imports and certifications. They are rather done on voluntary than compulsory basis because people see the benefits of harmonization and their production standards to international accepted. Any standard set by ACFS will cover all elements of food safety and hygiene of human beings, animals and plants and qualifications of specific consumer product's both food and non-food. ACFS divides its standardizations into three categories'commodity standards, system standards and general safety standards.

Commodity standards are set as national references for production, domestic and international trade, and guarantees of products.The standards cover both safety and qualifications of products that consumers need or minimum qualification of basic agriculture commodities such as those of jasmine rice, durian, mangoes,etc.

System standards are designed to be the criteria to assess and certify manufacturer 's practices from farm to packing house or factories including primary processors such as abattoirs and millers. Among Good Manufacturing Practice(GMP) or Good Hygiene Practice(GHP). Such standards can be used as

benchmarks for people involved such as farmers, distributors, or factories so that they can be assured that they will get agriculture commodities or food that are safe and in accordance with the all standards. Among manufacturing standards announced in 2004 were “GAP for Food Crops,” GAP for Bee Farm’s and Requirements for Wood Packaging for Export, which are set as references that these wood packaging have been through proper process to eliminate all pests.

General safety standards are specifically designed for food safety and Sanitation of animals and plants, which are imposed on agriculture commodities and all kinds of food, for example, Maximum Residues Limit (MRL) for pesticide maximum limit (ML) for contamination standards , standards on samplings and analysis,or standards on autopsies.

Utilization of Standardization

For Manufacturing: Farmers, manufacturer and exporter can use these standards as benchmarks to improve quality of their production and products ,which will help grading their goods in accordance with the national and international levels.

For Trade: In the past , buyers usually set out specification for goods they wanted to buy ;different buyers had different specifications. In other words, there were no standards set for products or quality of products that everyone could refer to. Therefore standardizations of products for their quality, size,or taste will help create benchmarks for both buyers and sellers, which will also help establish fair trade for both sides.ACFS has set a target to issue standards for the whole food chain of agriculture commodities. For instance, the standardization of jasmine rice will start from characteristics of paddy, unhusked rice and white rice.This chain involves erveryone from farmers, millers,traders, packaging factories ,and exporters. The standard of jasmine rice will cover both elements of product quality and its safety for consumers. ACFS also issued a Good Agriculture Practice for Thai jasmine rice which falls under the concept of standardization covering from farm to table.

For certification: According to the food safety strategy of Ministry of Agriculture and Cooperatives, the target is to register and certify farms of plants, fishery and livestock to standardize their practice by using GAP as evaluation tool. ACFS is obliged to set the standards of GAP in fields that farmers need and go along with plans of action for certification by agencies in the ministry; namely, Department

of Livestock Development, Department of Fisheries and Department of Agriculture.

For International Trade Negotiation National standardization: Facilitate trade negotiations, especially for the equivalence agreement between Thailand and trading partners. Most of these countries will require Thailand to have the same standard as their. Such requirement is not a problem to Thailand because ACFS standards are consistent with international standards set by CODEX, IPPC or OIE. In addition, Thai also proposed some standards for CODEX to issue as international practices.

The following is a list of food and agricultural product inspection and certification system manipulated in Thailand, as of international standards :

- Good Manufacturing Practices (GMP) or Good Hygienic Practices (GHP)
- Hazard Analysis and Critical Control Point (HACCP)
- Good Agricultural Practices (GAP)
- Code of Conduct (COC)

Certification Body certify from the farming level (GAP) up to factory production (GMP,HACCP) by providing Q mark to ensure the consumers both nationwide and worldwide of the internationally certified quality and safety.

Beneath “Q” mark there is an identification number to indicate the CB, type of certification, certification, certifying reference standard, production source and type of product. This certification number can be cross reference for information such as from which farm it is produced, where and when it is produced and what type of certification it has. This detail can help eliminating , error and solving problem simultaneously.

Q: Accountable and Reliable Mark. Q Mark can be classified into 2 levels of certification:

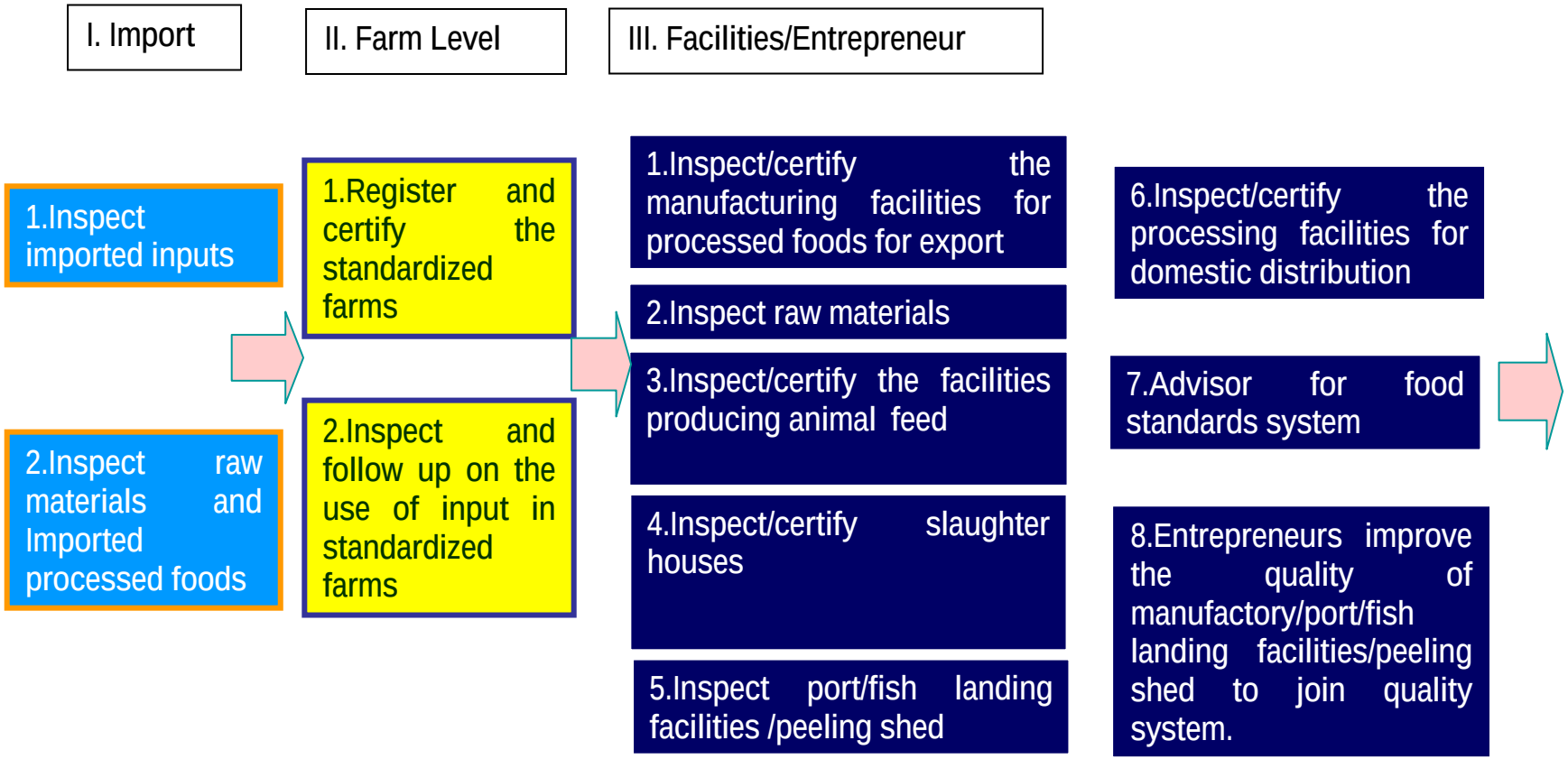
1. Product Certification: to certify finished product. The certification is regularly conducted to ensure the quality and safety of the product. Random testing is also a must for ensuring the standard certification. This type of Q Mark can be found on the label, container, wrapping, tying rope, or on the product.

2. System Certification: to certify production system such as GAP,GMP,HACCP , and CoC.

Conclusion

Food safety are vital and directly associated to trade between parties especially agricultural and food products. Thailand strongly believes that the food safety could be achieve if sound scientific justification could be provided and based on international standards. Food safety measures shall not be applied in a manner so as to become trade barriers, which is certainly against objectives to expand and facilitate trade between parties. At the next phase of the Thailand's road map on food safety, there will be a traceability system for inspection of various types of goods covering agricultural, fisheries and livestock products so as to respond to consumer's needs at domestic and international level.

ROAD MAP OF FOOD SAFETY



Implement the traceability procedures

ANNEX 8

FOOD SAFETY CONTROL IN VIETNAM AND THE CONTEXT OF SANITARY AND PHYTOSANITARY

1. Introduction

During last decade, the economic development of Vietnam has several difficulties, but the living condition of Vietnamese people has much improved. Parallel with the economic development, the gap between rich and poor became wider and wider. Improving food safety, agricultural health and fisheries are the main themes of Vietnam's comprehensive property reduction and growth strategy. Increasing domestic consumption and export market access with high quality of food products for the diversification of Vietnam's agricultural sector. Therefore, food quality control is essential for sustaining rural economic growth and property reduction.

2. Legal basic and guidelines

In Vietnam, the Ministry of health (MOH) and the Ministry of Science and Technology (MOST), as well as the Ministry of Agricultural and Rural Development (MARD), the Ministry of fishery (MOFI) and the Ministry of Industry (MOI) share the responsibility by managing of food safety and food quality. Moreover, the Ministry of Trade (MOT) and the Ministry of Finance play also important roles. A lot of problems have been emerged in managing the food quality and food safety due to the overlap of different government institutions.

Recognizing the problem of food safety in Vietnam, MOH has actively consulted the government to propose and implement the objectives of control food safety. The ordinance of food safety issued by the Parliament on 26th July 2003 consists of 7 chapters and 54 provisions and come into effect from 1st November 2003. This ordinance regulates the framework for managing the food safety at governmental and local administrations.

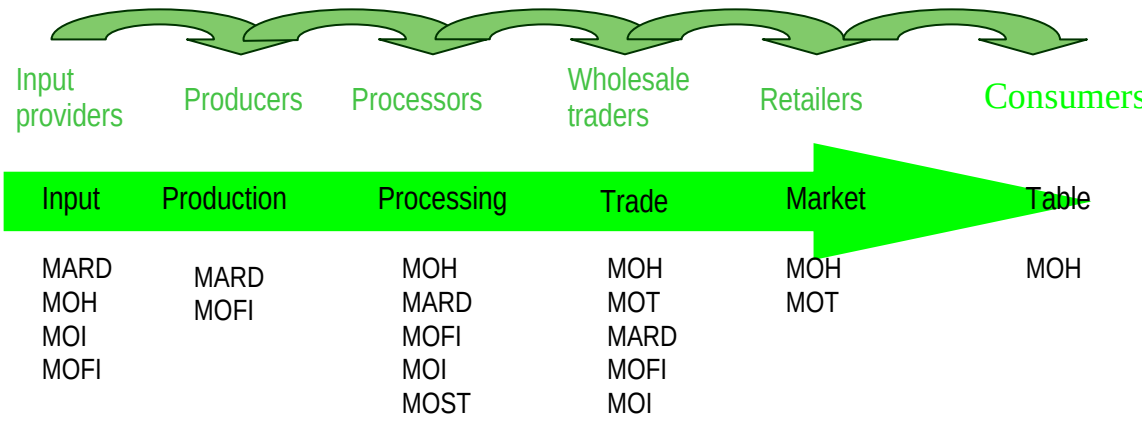
To implement and apply the food safety ordinance in a fully, unity and significant manner in social-economy, the implementing guidance of the food safety ordinance is necessary to develop and should follow the Vietnamese laws. On 7th

Sept 2004 the government has issued decree No 163/NĐ-CP for guiding to implement some provisions of the above-mentioned ordinance. According to contents of the decree, the food safety ordinance has concretized and fully implemented: Food safety management in Vietnam is under the responsibility of the MOI, MARD, MOFI and MOH, beside that the MOST other ministries likes MOF are responsible for the food quality and food safety standards. MOD, MOS... are responsible for assisting food safety control in the markets. They will set up for the national action plan on food safety for the period to 2010. On 20th June 2006, the Primer Minister has issued the decree No 43/2006/QĐ-TTg to ratify the food safety action plan for the period to 2010. The MOH will coordinate with related Ministries to build food safety control systems to 2010, furthermore to issue and strengthen guideline for the provinces, districts and villages in order to ensures their activities in controlling food safety.

3. Co-ordination of control food safety

The steering committee on food safety has been founded under the decision No.48/2005/ QĐ-TTg dated 8th February 2005. It consists of Directorate for Standards and Quality (STAMEQ) - MOST, General Department of Vietnam Customs (GDVC) – MOF, Department of Animal Health (DAH)- MARD, Plant Protection Department (PPD) – MARD, National Fisheries Quality Assurance and Veterinary Directorate (NAFIQUAVED) – MOFI, Market Control Department (MCD) – MOF, Science and Technology Department (STD) – MARD, Science and Technology Department (STD) – MOI, Inspection Department (ID) – MOH and Law Department (LD) – MOH. The steering committee will studied and proposed plans, policies, solutions to the Primer Minister concerning food safety management, to help the Primer minister by coordinating the activities of the Ministries in solving problems related to food safety and by guiding, observing and controlling the implementation of different ministries, provincial people's committee, cities under the governmental administrations as well as other economic sectors in governing food safety.

Food safety responsibility: Position of Ministries along Food Chain



Source: Adapted from Zhang X. and JC van Meggelen (2005)

3.1 The objectives of the national Plan in control of biological contamination and the chemical and pesticide residue levels on foods for period to 2010.

General objectives:

- To ensure food safety for domestic consumption and exports,
- To control hazards and contamination agents in food chain from production to processing, marketing and
- To end user, to minimize food born disease and dead cause of food contamination and to minimize the disease transmission through contaminated foods, assurance the public health and human welfare.

The foregone objectives:

- To build up a food safety control system, in order to control the biological contamination and chemical residue on foods
- To set up food standards, food quality, food safety and especially for the high infection food groups.
- To build up the standard labours, strengthen the capacity for food quality control and food safety control in big cities, Provinces and regions.

3.2 Activities in control food safety:

- Building up the demonstration of food production units, safety food processing nationwide
- Raising awareness on food safety, the perception for farmers, which response to food production, to the processors and to the traders to make sure the food is safety and right quality when it comes to the consumers.
- Strengthening propagandises, training and knowledge on food safety and the understanding of laws for farmers, producers, processors and servers
- Building up, promulgating and applying food safety standards: During last five years, 156 Vietnamese standards on food safety has been set, according to the managing scope of ministries some technical requirement and special standards has also setting up.
- MOH has issued 36 technical requirements and standards on food safety for public health (including testing procedures) and prepared 8 different technical documents. The standards of public health is step-by-step approaches to the international standards, and control procedures is also adjustment for suitable for the labour conditions of the MOH.
- MARD has issued 16 standards for animal health and technical requirements on food safety related to animal products. Concerning plant protection, 7 standard methods for controlling the pesticide residue in fruits, vegetables and tea have been issued and 5 protocols for control of pesticide quality have been set up.
- MOFI set up not only the fishery standards, which is equal to international standards but also set up the Vietnamese standards.
- The Vietnamese food administration (MOH) certified standard certificate for 1956 food products (December 2005), issued the registration number for 3.421 food products, received food documentation of 18.729 products and 535 documents for food advertisement.

4. Control of food safety

- Central government: Recently, the government offices in chart of control food safety was equipped by the MOH and some offices has reinvested in their basic equipment from their revenue from fees and expenses of hygiene and food safety control. Most of control offices have enough

equipment for sampling and testing food samples, but lacks of modern equipments, which is difficult to supply all their demands.

- Under the command of the Minister, MOH has coordinated with other ministries to build up the food safety control systems nationwide. Therefore, up to 2010 the MOH will have to build 5 food safety control centres (1 national centre in Hanoi and 4 others in Nha Trang Pasteur Institute, Institute of Public Health, Tay Nguyen, and Can tho Institute of Hygiene and Epidemiology). The labour of Nutrition Institute has certified with ISO and applied the ISO management system.

- MOH will facilitate and improve the Labours of Institute of Public Health and of Tay Nguyen Institute of Hygiene and Epidemiology in order to get the ISO/IEC 17025

- Medical centres of provinces: In accompany with the basic equipments, some of modern analytical equipments has been equipped such as: 2 gas chromatography-mass spectrometer ((GC/MS), 10 liquid chromatography (HPLC), 10 Gas chromatography and 27 UV-Vis. Those equipments have helped the centres to identify almost food born diseases cases. In the year 2001, 21,4% of the causes of food born diseases could not be identified, but in 2005 only 3,6% of those cases were not identify. Beside that, 430 quick test sets from Thailand and 350 quick test sets from Vietnam have been made in order to supply for controlling food safety on district level.

4.1 In country inspection and control food safety

Central government

- The VFA has cooperated with the STAMEQ (MOST) and DMC (MOI) to establish the control delegations for controlling food safety in different Provinces, cities under central government, especially in the provinces, which have border with China, Laos and Cambodia.

- VFA also organize the Inspection Department of MOH and the Inspection sub-department of Hanoi, HCM city, Da Nang to control the food selling on the street. In the year of 2005, 4 different delegations have been founded

to control food safety during the Binh Tuat Tet festival (Bin Tuat Lunar New Year) in some provinces.

- During the food safety months 620.884 food production units and enterprises have been checked, 71,9 % of them are met requirement of food safety. The control delegations have took 101.537 samples for controlling and 76.023 samples met the parameters for food safety.

Local government

The governor of provinces cooperate with Medical Centres, Police and Market control sub-departments to control the food production units, food services by controlling the license, standard conditions for food processing, and by implementing of food safety requirements for producing, processing and selling, sampling the water, which used for producing, processing and food services to analyse. 209.222 food production units have been controlled, from which 75,8 % met the food safety requirements, 1.117.114 traders have been controlled, and from which 75,9% could ensure the safety procedures for selling safety foods. 31.761 refectories have also been controlled and more than 80% met the requirements for refectory food safety.

4.2 Control of imported foods

- The control of imported foods plays an important role. At the moment, there are 9 different governmental offices, which are responsible for the control of imported foods nationwide. They control mainly the legal imported food and located in Hanoi, HCM city and Da Nang. There are 3 centres of STAMEQ (Da Nang Centre for Standards and Quality, Ha noi Centre for Standards and Quality and Ho Chi Minh Centre for Standards and Quality), 4 institutions of MOH (Institute of Nutrition, Nha Trang Pasteur Institute, Ho Chi Minh Hygiene and Public Health and Tay Nguyen Institute of Hygiene and epidemiology) and 2 Medical centres of Hai Phong and Quang Tri. They can control a part of imported foods, which belong to the control list of government. According to the primarily report of MOI approx. 80% of imported food are through Ho Chi Minh harbours, however, only imported foods of companies near the cities can be controlled, while it is difficult to control the storages far from the cities or remote areas.

- The control procedures: the completed packet food, which has announced, the controller can only control the documents, invoice and label. For the fresh fruits, vegetable or animal products, there are two cases: if the two countries has signed the agreement in bilateral trade, then only the document will be controlled without sampling, whereas if the agreement has not been signed, all the document control, observe and sampling are necessary.

- The control of imported food over sea, by aviation as well as through border trade is very important, the more intensive trade of food imported over the border, the higher the Hazards we may have for food safety. The control of imported food at border gate or border crossing has been coordinated by the ministries, help to minimize the food hazards and unsafety foods.

- For more effective in control food safety requires the stronger coordination between government authorities, institutions and local authorities. The training, seminar and exchange of experiences should be organized and the equipments for the medical, plant and animal quarantine should be enhanced at the border. Finding out the best model for controlling food safety at border appropriate with the trend when Vietnam become WTO member. Issuing new policies or proposing better solutions to control food safety in border gates.

5. Problems of control food safety

- Although MOH and others ministries as well as provinces are interested in food safety and controlling food safety, especially after the Decree 163 come into actions, its prevent food hazards, raising awareness for public on food safety. But there are many problems during the implementation that need to be improved. Lack of expertises and the professional inspectors on food safety, for instance we have only 30 to 40 experts on food safety control, while in Japan the number is 12,566.

- Food safety control is not during processing or delivering to consumers, the grass root of the problem is by the whole food chains, we should apply the concept “farm to fork” to ensure the food safety as well as food quality

for domestic and exports. The agricultural products still have high pesticide residue, heavy metal, which is often exceed the MRLs.

- For animal production and processing, the problem concerning residue of antibody, hormone and chemical contamination may resulted from hygiene, from animal feed, or microbial contamination during processing. There is lack of facilities for animal processing, all slaughterhouses are managed by private and their the hygiene conditions are most very poor. For example, the investigation of DAH shows only 45,6% (197/ 432) slaughterhouse have the license of the local authorities and 40 % (173/432) meet the hygiene requirement for animal processing.

- Since 1995, MOFI has established the concept “pond to table”. The environment pollution due to leak of pesticides, heavy metal, veterinary and aquatic feed are potential hazards for fishery. The control of chemical and antibody residue, which harm to human health, is not completely achieved from breeding, harvesting, processing and retailer. Therefore in 2005, hundred of fishery assignments have been returned due to chemical and antibody residue (EU: 85, USA: 46, Canada: 66 and South- Korea: 18). The problem does not only cause economic loss for exporter, negative effect for domestic consumptions, but also to the prestige of Vietnam’s food in international markets.

- The food safety control for the middle and small enterprises is out of control of MOI, MOF and MARD, when they do not apply protocols for food safety processing (GMP or HACCP), but they supply almost foods and beverages for domestic consumption. Beside that, there are 270 traditional food-processing villages and family food processing units in Vietnam and the investigation of 2003 showed that only 76 % of them met the requirement for food safety processing. Furthermore, the food coloured and food additives are mainly imported and these are most out of control.

6. Raising awareness on food safety

6.1 Social activities

To raise perception of the public on food safety from year 1999 to 2005, the action months on food safety has been organized, it accelerate different target groups involves in food safety activities. (See table 1.)

Table 1: The active months on food safety from 1999 – 2006

Nr.	Year	Theme	Target group
1	1999	Prevent food born diseases	Trader and consumers in the city
2	2000	Food hygiene and food safety in production, processing and refectory	Producer, trader and Consumer in the city
3	2001	Prevent transmissions of food born diseases	Manager, leader, producer, trader and consumer
4	2002	Conscience of producer and trader	Producer, trader in the city
5	2003	Foods in the street and the cultural health	Local government, producer, trader, food selling in the street, consumer
6	2004	Food Production, food selling and food processing follows the food safety ordinance	Producer, trader and consumer in the city
7	2005	communal refectory – the safety refectory	Manager and leader of the factory, enterprise, company, industrial zone, school. The processor, server and consumer in the communal refectory
8	2006	Prevent food contamination	Food producer and food processor, trader and consumer in the city. the Manager and leader of ministry, department and union

6.2 Training and education on food safety

From 2002 to 2005, VFA coordinated to Hanoi Medical University, Thai Binh Medical University organized 13 training courses for 559 technicians, which will work on food safety of medical Centres of provinces. (See Table. 2)

Table 2. Training course for technician from 2002 – 2005.

Nr.	Year	Course	Participants	Regions
1	2002	1	30	Northern Provinces
2	2003	2	66	37 northern provinces and southern provinces
3	2004	1	24	Central coaster and south-western highland
4	2005	9	439	41 cities and provinces nationwide

The training courses for worker and trader nationwide has also conducted and health control for this period has been done (see table 3)

Table 3. The training and periods health control for worker from 2001 – 2005

Nr.	Target groups	2001	2002	2003	2004	2005
1	Workers in production and processing units					
	Training	62.007	73.053	71.702	89.463	58.532
	Periods of health control	82.729	72.079	61.131	84.317	76.363
2	Trader					
	Training	70.915	74.389	115.607	95.578	95.444
	Periods of health control	56.759	80.075	71.377	87.990	104.526

Raising awareness on food safety has spread through Vietnam Television on channel VTV1, VTV2 and VTV3 with 800 news and reports (1600 broadcasts) and 1532 messages (broadcasts for 1532 minutes), on Vietnam Radio in 8 programmes with 2600 news and reports (5200 broadcasts) and 1270 messages for 1270 minutes. The print, audio and video media has also published, for instance 15 kinds of books and 20 kinds of pamphlets, 1761 videos and 1520 cassettes. The information can be gotten under the website www.vfa.gov.vn

6.3 Other official activities

The Ministry of Training and Education (MOTE) has brought food safety programme in training for students at the universities and schools. MARD will strengthen the safety fruits and vegetables production as well as animal production. The Ministry of Defense and Ministry of Security will take the responsibility to impart food safety issues to the soldiers and peoples in the remote areas as well as coordinate with other Ministries in controlling food safety in the market.

The district authorities will organize the food safety active months on the commune level, to raise awareness on food safety. Beside that the Women Union and Young Union also play a very important role in spreading the information on food safety.

7. Outcomes

- Legal documents concerning the hygiene and food safety has issued for the whole food supply chains.

- The control and training activities related to food safety have improved the perception of different social groups on the important role of food safety (see table 4.)

Table 4. The perception of different social groups on food safety

Target group	Perception on food safety (%)		Increase (%)
	Year 2000	Year 2005	
Producer	38,1	47,8	9,7
Trader	31,8	38,6	6,8
Consumer	22,6	38,3	15,7

- The food safety control network has strengthened at the governmental to the local levels nationwide.

- The perception of different social groups on food safety has improved and the food hazards have reduced.

- Coordination between governmental authorities of food safety control and different social group is improved and activities on food safety are socialized as well.

- The typical demonstration on food safety has built up, for instance: demonstration for food selling in the street, social communication, new social life, prevention of food contamination and apply the HACCP for food production and food processing units.

- The human health was improved through reduction of the food born diseases: in the year 2005 cases of food born disease has decreased 2,1 % to 2004 and 56,5% to 1999 , the number of peoples suffer from food born disease has decreased 43,3 % to 1999 and the dead cause by food contamination has also decreased 28,2 % to 1999.

- The number of food processing units and traders has increased and engaged to food safety requirements: food production units increased from 66,7% in 2001 to 76% in 2005, and the food trader increased from 66,5% in 2001 to 76,5% in 2005.

- The social-economic situation has been improved through the decreasing the expenses for food illnesses, treatments, improving the food quality and food safety in order to meet the requirement of the higher markets likes EU, US and Japan, especially by sea food and pork. Activities on food safety have been strengthened in the urban and rural areas

8. Food safety prospects.

- Improving access to safety food
- Minimizing the loss cause by food-born diseases
- Maximizing benefits from increasing access to domestic and international markets and
- Strengthening Vietnam's capacity on food security control to ensure its effective implementation and its WTO SPS commitments.