

**Japan International
Cooperation Agency
(JICA)
Thailand Office**

**The Kingdom of Thailand
The National Bureau of Agricultural
Commodity and Food Standards (ACFS),
Ministry of Agriculture and Cooperatives**

**The Study
for
Strengthening the Food Safety Policy
in
The Kingdom of Thailand**

FINAL REPORT



October 2004

Overseas Merchandise Inspection Co., Ltd.

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The Kingdom of Thailand
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Abbreviations

AB	: Accreditation Body
ACFS	: National Bureau of Agricultural Commodity and Food standards (MOAC, Thailand)
ADB	: Asian Development Bank
AFTA	: ASEAN Free Trade Area
AI	: Avian Influenza
APEC	: Asia-Pacific Economic Cooperation
APLAC	: Asia Pacific Laboratory Accreditation Cooperation
ASEAN	: Association of Southeast Asian Nations
BIOTEC	: National Center for Genetic Engineering and Biotechnology (Thailand)
BLA	: Bureau of Laboratory Accreditation (DSS, MOSTE, Thailand)
BLQS	: Bureau of Laboratories Quality Standards (DMSc, MOPH, Thailand)
BRC	: British Retail Consortium
CAC	: CODEX Alimentarius Committee
CB	: Certification Body
CEN	: European Committee for Standardization
COA	: Council on Accreditation
COC	: Code of Conduct
CODEX	: CODEX Alimentarius
CSSA	: Office of Commodity and System Standards Accreditation (ACFS, MOAC, Thailand)
DLD	: Department of Livestock Development (MOAC, Thailand)
DOA	: Department of Agriculture (MOAC, Thailand)
DOAE	: Department of Agricultural Extension (MOAC, Thailand)
DOF	: Department of Fisheries (MOAC, Thailand)
DMSc	: Department of Medical Science (MOPH, Thailand)
DPO	: Dairy Farming Promotion Organization (MOAC, Thailand)
DSS	: Department of Science Service (MOSTE, Thailand)
DTEC	: Department of Technical and Economic Cooperation (MOFA, Thailand)
EA	: European Cooperation for Accreditation
EC	: European Community
EMS	: Environmental Management System
EPA	: Economic Partnership Agreement
EU	: European Union
EUREPGAP	: Euro Retailer Produce Working Group - Good Agricultural Practice
FAO	: Food and Agriculture Organization
FDA	: Food and Drug Administration (MOPH, Thailand)
FSOC	: Food Safety Operation Center (MOPH, Thailand)
FSA	: Food Standards Agency (UK)
FTA	: Free Trade Agreement
FTI	: The Federation of Thai Industries
GAP	: Good Agricultural Practice
GHP	: Good Hygiene Practice
GLP	: Good Laboratory Practice
GMP	: Good Manufacturing Practice
GTZ	: German Technical Cooperation Agency
HACCP	: Hazard Analysis Critical Control Point
HPAI	: Highly Pathogenic Avian Influenza
HRD	: Human Resources Development

IAF	: International Accreditation Forum, Inc.
IAJapan	: International Accreditation Japan (NITE, Japan)
IEC	: International Electro-technical Commission
ILAC	: International Laboratories Accreditation Counsel
IPPC	: International Plant Protection Convention
IRCA	: International Register for Certificated Auditors
ISO	: International Organization for Standardization
JAB	: Japan Accreditation Board for Conformity Assessment
JAS	: Japanese Agricultural Standards
JASA	: Japanese Agricultural Standards Association
JBIC	: Japan Bank for International Cooperation
JCLA	: Japan Chemical Laboratory Accreditation
JCSS	: Japan Calibration Service System
JECFA	: Joint Expert Committee on Food Additives
JETRO	: Japan External Trade Organization
JFRL	: Japan Food Research Laboratories
JICA	: Japan International Cooperation Agency
JNLA	: Japan National Laboratory Accreditation system
JSA	: Japan Standards Association
JTEPA	: Japan-Thailand Economic Partnership Agreement
LCFA	: Laboratory Center for Food and Agricultural Product Co., Ltd. (Thailand)
MAFF	: Ministry of Agriculture, Forest and Fisheries (Japan)
MASCI	: Management System Certification Institute (MOI, Thailand)
METI	: Ministry of Economy, Trade and Industry (Japan)
MHLW	: Ministry of Health, Labour and Welfare (Japan)
MLA	: Multilateral Recognition Arrangement
MOAC	: Ministry of Agriculture and Cooperatives (Thailand)
MOC	: Ministry of Commerce (Thailand)
MOFA	: Ministry of Foreign Affairs
MOI	: Ministry of Industry (Thailand)
MOPH	: Ministry of Public Health (Thailand)
MOSTE	: Ministry of Science and Technology (Thailand)
MOU	: Memorandum of Understanding
MRA	: Mutual Recognition Arrangement (Agreement)
MRL	: Maximum Residue Limit
NAC	: National Accreditation Council (TISI, MOI, Thailand)
NAFTA	: North American Free Trade Agreement
NATA	: National Association of Testing Authorities (Australia)
NESDB	: National Economic and Social Development Board (Thailand)
NFI	: National Food Institute (Thailand)
NTB	: Non-Tariff Barrier
NITE	: National Institute of Technology and Evaluation (Japan)
OIE	: Office International des Epizooties
PAC	: Pacific Accreditation Cooperation
PT	: Proficiency Test
QMS	: Quality Management System
QSA	: Quality Systems Assessment
SCA	: Standards and Conformity Assessment
SPS	: Sanitary and Phytosanitary Measure
TBT	: Technical Barriers to Trade

TISI	: Thai Industrial Standards Institute (MOI, Thailand)
TISTR	: Thailand Institute of Scientific and Technological Research (MOSTE, Thailand)
TLAS	: Thai Laboratories Accreditation Scheme
TRIP	: Agreement on Trade-Related Aspects of Intellectual Property Rights
UKAS	: United Kingdom Accreditation Service
VLAC	: Voluntary EMC Laboratory Accreditation Center Inc. (Japan)
WHO	: World Health Organization
WTO	: World Trade Organization

Summary

Summary

1. Outline of the Study

(Background)

Food Safety is now one of the most important issues over the world. In Thailand, the recent outbreak of bird-flu, in addition to detection of antibiotic residues in shrimps and excessive pesticide residues in vegetables, have forced the government and private sectors to strongly recognize the necessity of immediate improvement of the food system. Whereas, food sector is an essential area in Thailand since the government has a policy to promote Thailand as “The Kitchen of The World”.

(Scope/ Objectives)

Under that background, the Study for Strengthening the Food Safety Policy in Thailand was initiated by the Japan International Cooperation Agency (JICA) Thailand Office in coordination with the National Bureau of Agricultural Commodity and Food Standards (ACFS), Ministry of Agriculture and Cooperatives (MOAC). The Study extended for 7 months from the end of March 2004 to the end of October 2004, covering a wide range of Food Safety issues and aiming at facilitating international food trade.

The Objectives of the Study are:

- (1) To survey current situation and find problems on food safety in Thailand,
- (2) To analyze the problems and set the direction of future project ideas for improvement,
- (3) To formulate the appropriate projects for Thai government and food industry, and
- (4) To disseminate the information of food safety for food industries and consumers

The Study consists of two (2) phases, the Basic Study (Phase 1) and the Project Finding Study (Phase 2). The Basic Study was conducted from the end of March to the beginning of June 2004, including the Case Study, the Workshop and the Overseas Study (Japan). The Project Finding Study started in the middle of June 2004 and concluded at the end of October 2004, including the Field Survey, the Seminar and the Overseas Study (Japan).

By now, the following Reports were prepared and submitted:

- (1) Inception Report (April 2004)
- (2) Interim Report (June 2004)
- (3) Progress Report (September 2004)
- (4) Draft Final Report (October 2004)

The Final Report presented here summarizes the outcome of the Study, covering the subjects indicated in the Terms of Reference attached to the Agreement between JICA Thailand Office and the Consultant.

2. Concept for Strengthening the Food Safety in Thailand

In response to the internal and external concerns on Food Safety, the National Bureau of Agricultural Commodity and Food Standards (ACFS) was established under the Ministry of Agriculture and Cooperatives (MOAC) in 2002. The ACFS, in coordination with relevant government bodies, is acting as a national single body responsible for all issues relating to agricultural and food products for export, in order to improve the quality of Agricultural Products and Food, and also ensure the safety of consumers in both domestic and international markets. The Key Objectives of its activities are:

- (1) Promotion of the process of Risk Assessment in the Whole Food Supply Chain from farm to table (Risk Assessment)
- (2) Facilitation of Quarantine, Inspection and Certification in food processing industries (Risk Management)
- (3) Exchange of information to comply with the requirement of international and domestic markets (Risk Communication)

To achieve the objectives, the ACFS established and launched the Road Map that includes standards, inspection, certification, monitoring and international negotiations, towards the ultimate goal for ensuring the Food Safety.

This Study has been conducted under the conceptual framework as above.

3. Basic Study

The Basic Study was conducted from the end of March up to the beginning of June 2004. The Study clarified the system and the problems on the Food Safety in Thailand from the viewpoint of international requirement, through the Case Study by commodity. Also, Food Safety System in Japan was made clear by Overseas Study (Japan).

(Case Study)

The field survey was conducted for the commodities of livestock, seafood and fruit/vegetables by using questionnaire, individual interview and site visit from April to May 2004. Information was collected from various sources (mainly private sectors) in various production/marketing areas. There were some difficulties in the site visits on poultry under the sensitive situation with bird-flu. The study for seafood focused on only shrimp since the shrimp industry shares more than 60 % of export value in fishery sector.

(Key Problems)

As a result of the Case Study, problems were summarized as (a) Communication between the Governments of Thailand and Japan, (b) Accreditation/Certification/Quarantine, (c) Primary Production System, (d) Traceability System, (e) Pre-Certification System, (f) Information

System, (g) Cold Chain System, and (h) Packaging System.

(Heat-processed chicken case)

The outbreak of bird-flu compelled Japan to ban the import of Thai chicken in the beginning of the year 2004. Responding to such situation, a series of quick and effective actions were taken between the Government of Thailand and Japan through close communication in terms of Risk Analysis on Heat-Processed Chicken. This case is recognized as a good lesson for future possible incident.

(Food Safety System in Thailand and Japan)

In Thailand, Food Safety Policy and Action Plan are mainly undertaken by the Ministry of Agriculture and Cooperatives (MOAC), and the Ministry of Public Health (MOPH), the former being responsible for ensuring the Food Safety for export and the latter taking responsibility for monitoring of food import and local consumption. The National Bureau of Agricultural Commodity and Food Standards (ACFS), under MOAC, has just started its activity as an Accreditation Body (AB) to accredit Certification Body (CB) for the food related system (HACCP, GMP, GAP, etc.) and will begin the activity to accredit the food laboratories in future. The government of Thailand designated 2004 as the year of Food Safety, in an attempt to strengthen the inspection of safety and the certification of quality of food and agricultural products. Many proactive steps have been taken by the government and its agencies, which have made Thai consumers much more aware of Food Safety issues.

In Japan, Food Safety Commission was established in 2003 in the Cabinet Office of the Government of Japan under the Food Safety Basic Law enacted, in order to ensure Food Safety. The Commission is an organization to undertake Risk Assessment, being independent from Risk Management organizations such as the Ministry of Agriculture, Forest and Fisheries (MAFF) and the Ministry of Health, Labour and Welfare (MHLW). Quarantine and Inspection System for imported food is established and implemented by MAFF and MHLW. Accreditation activities related to food are mainly undertaken by private sectors.

(Project Ideas)

As a result of the Basic Study, the project ideas were formulated and classified to (a) Strengthening Accreditation/Certification, (b) Strengthening Primary Production, (c) Improvement of Food Supply Chain, (d) Strengthening Pre-Certification System, (e) Strengthening Traceability System, and (f) Establishment of Information Program.

(Communication between the Governments of Thailand and Japan)

Result of the Basic Study suggests the necessity of strengthening the communication system on Food Safety between the Governments of Thailand and Japan by setting up a mechanism,

“the Committee on Food Safety”, as a tool to facilitate the projects and discuss the issues related to Food Safety.

(Workshop)

At the end of the Basic Study, the Workshop was held to discuss the result of the Basic Study, where the basic consensus was reached among participants on the direction for future projects as described above.

4. Project Finding Study

Following the Basic Study, the Project Finding Study was conducted from the middle of June up to the end of October 2004. The Study formulated the Candidate Projects, based on the result of the Basic Study and taking various relevant aspects into account.

(Field Survey)

The Study Team visited a number of government organizations concerned, in addition to private sectors, to collect relevant information, opinions and views on Food Safety in Thailand. The Team had a series of meetings with the implementing agencies assumed for the Candidate Projects to discuss the matters in detail. Also, the Overseas Study (Japan) was conducted for further clarification of the Food Safety System in Japan. All those were reflected in formulating and justifying the Candidate Projects.

(Approach to the Project Formulation)

The Project Finding Study formulated the Nineteen (19) Candidate Projects under the “Umbrella Program” for strengthening the Food Safety Policy in Thailand, taking the following points into due consideration:

- (1) Concept for Strengthening the Food Safety set by the Government of Thailand
- (2) Key Problems raised by private sectors in the Basic Study
- (3) Key Project Ideas formulated in the Basic Study
- (4) Opinions/ views from relevant government organizations in the Project Finding Study

As a result of the study described above, the priority area of the projects has been categorized into three (3) groups: Accreditation, GAP Implementation and Food Supply Chain.

(Seminar)

In the Project Finding Study, the Seminar was held to report the result of the study and also to share knowledge and experiences of Japan in the key areas of Risk Assessment, GAP implementation and Traceability system.

5. Candidate Projects

As summarized so far, the “Umbrella Program” for strengthening the Food Safety Policy in Thailand is divided into the following three (3) groups, comprising the Nineteen (19) Candidate Projects:

Category-A: Projects for Strengthening the Accreditation Capacity

Category-B: Projects for Strengthening the GAP Implementation

Category-C: Projects for Improvement of Food Supply Chain

Sharing knowledge and experience of Japan by implementing these projects, under Japan’s Technical Cooperation, will greatly contribute to strengthening the Food Safety in Thailand and eventually facilitating the external food trade procedure.

Background and purpose of each Candidate Project are outlined as follows:

Category A: Projects for Strengthening the Accreditation Capacity

Project A-1:

Strengthening the Accreditation Capacity on Production System Certification

Certification System on GAP, GMP, HACCP and Organic farming in Thailand needs more improvement for its efficiency, in order to promote an appropriate production system. Strengthening of the Accreditation Capacity on production system certification is indispensable. However, CSSA (ACFS, MOAC), as an accreditation body (AB) responsible for agricultural commodities and foods, has just started its accreditation activity for this area, and human resources are very limited in number and skills. This project aims at the development of human resources required for the accreditation activity on production system to the international recognized level. The project includes the trial-run program for verification.

Project A-2:

Strengthening the Accreditation Capacity on Training Program for Food Safety

Currently, many training programs on Food Safety have been implemented by various sources (government and private) in Thailand. However, those programs are not standardized nor harmonized, leading to difficulties in promotion of the Food Safety measures. Accreditation system for training programs on Food Safety needs to be established and strengthened for the integrity of the training programs. This project aims at the development of human resources required for the accreditation activity on training program for Food Safety.

Project A-3:

Strengthening the Accreditation Capacity on Food Laboratories

Accreditation System on Food Laboratories in Thailand does not meet the increasing market demand for laboratory competency, due to limited human resources in number and skills. At this moment, CSSA, as an accreditation body (AB) responsible for agricultural commodities and foods, is in a position to recognize and register the laboratories that have been accredited by another existing AB. The CSSA will start its accreditation activity for this scheme as soon as its human resources (number and skills) have been made available enough. This project focuses on the development of human resources required for the accreditation activity on food laboratories to the international level. The project includes the trial-run program for verification.

(Project A-1, A-2 and A-3 can be formulated in one package of the “Technical Cooperation Project” for strengthening the Accreditation Capacity, when implementing)

Category B: Projects for Strengthening the GAP Implementation

Project B-1:

Strengthening GAP Implementation in Primary Production of Fruit and Vegetables

Thai Government set the challenging target for promoting GAP on fruit and vegetables, for ensuring Food Safety to the benefit of consumers. For achievement of the target, however, more improvement is needed for (a) Human resources (number and skills) for implementation of GAP; (b) Incentive for farmers/exporters; (c) laboratories competency for analysis; (d) Practicality of GAP guidelines; (e) Training programs; and (f) Production technology. This project aims at strengthening the capacity of human resources of government sectors to extend it to the level of primary production, in addition to the development of appropriate GAP implementation system.

Project B-2:

Strengthening GAP Implementation and Laboratory Capacity in Shrimp Production

Thailand is one of the world leading countries in shrimp production. Shrimp has been greatly contributing to the Thai export of foods. Recently, however, Thai shrimp products has faced the problem with some antibiotics residue due to the wrong application by producers. This made the volume of shrimp export reduce drastically. Under the Government's declaration of the year 2004 as the “Food Safety Year”, the Department of Fisheries (DOF, MOAC) has set up the food safety projects for fish and shrimp production in order to improve the quality of the products. Main constraints among others are the insufficient facilities and equipment of existing DOF laboratories, and the limited number of personnel for efficient services. Target of the project is to improve the monitoring system for promotion of GAP (Good Aquaculture Practice) in marine and freshwater shrimp

production.

Project B-3:

Strengthening GAP implementation in Poultry Production

Under the background of recent outbreak of bird-flu, Department of Livestock Development (DLD, MOAC) is on process to strengthen GAP in poultry production. However, more improvement is still needed to implement GAP, for (a) Efficiency of the training program on farm standards; (b) Efficiency of the laboratories analytical services in terms of limited human resources; and (c) Implementation of traceability system. This project is to develop the human resources and establish the information system for strengthening the GAP in poultry production.

Project B-4:

Quality Assurance in Pesticide Use and Impact Management in Thailand

It is currently recognized in Thailand that health problems on human beings become more serious with more use of pesticides. Many farmers are not well aware of the dangers caused by use of agrochemicals. Alternative safer pest management practices are not well implemented. Consumers' demand for reduction of pesticide use are getting stronger, pressuring the governments of Thailand and food importing countries. Application of up-to-date methods of pesticide residue analysis, the environmental monitoring and health risk assessment program are important. This project is to develop an innovative and appropriate technology on pesticide residue and formulation analysis as well as impact on environment, sharing technology and experience of Japan in this area.

Project B-5:

Improvement of Risk Assessment Program

Risk assessment is an essential procedure before distributing agricultural commodities and foods to the consumers, especially foreign markets. To expedite the risk assessment process, the MOAC has established the "Integration of Improvement of Risk Assessment Program" as a systematic and technical risk assessment development, under the framework of joint implementation by the Department of Agriculture (DOA), Department of Livestock Development (DLD) and Department of Fisheries (DOF). This project aims at further strengthening of the risk assessment system for production system, in coordination with the said program.

Category C: Projects for Improvement of Food Supply Chain

Project C-1:

Establishment of Information System on Food Safety, Regulations and Standards, Alert and Awareness

Many governmental bodies are involved in Food Safety related issues in Thailand. Each organization has its own information relevant to Food Safety, which is made available separately. This causes inconvenience on private agri-food industrial sector, exporters and consumers, in their access to domestic and international information. This project aims at establishment of information system covering all issues related to Food Safety. Information Technology Center (ITC) under ACFS will be the core organization for this project.

Project C-2:

The Improvement of Traceability System for fresh fruit and vegetable

Traceability System is now recognized to be one of the key issues in terms of Food Safety in Thailand. Some fresh vegetable processors/exporters are implementing their own in-house traceability program, but the majority of private sectors are not in a position to implement traceability system mainly due to limited human resources. For promotion of the traceability system of fruit and vegetables in Thailand, more improvement is needed for (a) Complicated supply chain; (b) Guidelines for traceability system; (c) Incentive for implementing traceability system; and (d) Small-plots and dispersed farms. Target of the project is to develop and disseminate a proven traceability system for fresh fruit and vegetables in Thailand. The project includes trial-run program for verification.

Project C-3:

Strengthening of Traceability System for CoC Shrimp Production

The Thai-French Cooperation Program has just been completed in mid-2004, leaving the traceability concept for shrimp. However, it is reported that the program has not covered the whole supply chain and also not well functioned. In many cases, the records of products are still made only in documentary files at every stage of the supply chain, not on database. More efficient traceability system needs to be established for ensuring the Food Safety. This project is to develop computerized traceability system for marine shrimp production, sharing knowledge and experience of Japan in some seafood products.

Project C-4:

Strengthening of Traceability System for Poultry Products from raw materials to the end products

Traceability System is now recognized to be one of the most important issues for strengthening the Food Safety in Thailand, particularly for poultry products under the background of bird-flu incident. In many cases, the records of products are still made only

in document papers at every stage of the farm, slaughterhouses, processing plants and feeds supply, not on database system. The present traceability system needs to be improved on database system in order to function more effectively, for ensuring the Food Safety. Target of the project is to establish the improved model of traceability system for poultry products.

Project C-5:

Strengthening the Pre-certification System for Export Processed Fishery Products and HACCP Implementation

Fishery products play an important role in Thai economy. However, ordinary procedure for export of fishery products to Japan requires long time until the products reach the marketing destination, which burdens importers in Japan so much in cost and time for waiting. The Ministry of Health, Labour and Welfare of Japan (MHLW) established the Pre-certification System for Imported Processed Food to ensure the products' conformity with the requirement of Japanese Food Sanitation Law, and to simplify and expedite import procedures for registered products. The Pre-certification system in Thailand needs more improvement on awareness of the procedures, incentive for adopting the system and also knowledge on HACCP in fishery products industry. Exporting of fishery products under the Pre-certification system is very limited so far. This project aims at promoting the implementation of the Pre-certification system for processed fishery products.

Project C-6:

Strengthening and Improvement of Cold Chain System of Shrimp and Human Resource Development

Shrimp is now a major exporting commodity in Thailand. However, from harvesting to the marketing destination, shrimp is affected by many factors in terms of food safety and quality. The most important parameter among others is the temperature during transportation. Transportation time and cooling temperature cause large impact on quality of shrimp. Decomposition of shrimps and contamination by pathogenic microorganisms is still observed, subject to detention by authorities of importing countries. This project aims at improvement and strengthening of cold chain of shrimps, and also human resources development.

Project C-7:

Strengthening and Improvement of Cold Chain System of Poultry Product and Human Resource Development

Temperature during transportation is one of the most important parameters in terms of food safety and quality of poultry products. However, improper temperature management is still observed in transportation of poultry products, causing decompose of the products and contamination by pathogenic microorganisms. This project aims at improvement and strengthening of cold chain of poultry products, and also development of human resources.

Project C-8:

Improvement of Packaging Systems in Fruit and Vegetables

Food Packaging is one of the important issues in terms of food safety, particularly for fresh fruit and vegetables due to its perishable features. However, food packaging in Thailand needs more improvement for (a) Packaging materials in terms of protection of the products from damages; (b) Limited suppliers of packaging materials; (c) Research and Development; and (d) knowledge of Food Safety on packaging issues. This project is to develop and disseminate an appropriate packaging technology for the commodities of fresh fruit and vegetables, by introducing Japan's packaging consultant system.

Project C-9:

Improvement of Packaging Systems in Fishery Products

Packaging of fishery products plays an important role for maintaining food safety and quality. However, the present packaging system in Thailand needs more improvement in terms of quality, handling, economy, etc. This project is to improve the packaging technology for fishery products from the viewpoint of strengthening the Food Safety.

Project C-10:

Improvement of Packaging System in Livestock Products

Packaging of livestock products plays an important role in terms of food safety and quality. However, the present packaging system in Thailand needs more improvement for (a) Limited suppliers of packaging materials; (b) Research and Development; and (c) knowledge of Food Safety on packaging issues. This project is to develop and disseminate an appropriate packaging technology for livestock products.

Project C-11:

Improvement of Supply Chain Management for Fruit and Vegetables: Post Harvest Handling and Cold Chain Management

Fruit and vegetables play an important role in Thai economy. However, its perishable features and wide variation in property of commodities make it difficult to maintain food safety and quality. Postharvest losses (qualitative and quantitative) of fruit and vegetables are sometimes reported to be substantial. Inappropriate temperature management and improper postharvest handling are still observed, leading to a negative impact on food safety. This project aims at the development and dissemination of practical postharvest technology for improvement of supply chain management of fruit and vegetables.

Chapter 1

Introduction

Chapter 1 Introduction

1.1 Background of the Study

Food Safety is now one of the most important issues over the world. In Thailand, the recent outbreak of bird-flu, in addition to detection of antibiotic residues in shrimps and excessive pesticide residues in vegetables, have forced the government and private sectors to strongly recognize the necessity of immediate improvement of the food system. Whereas, food sector is an essential area in Thailand. Thai food exports ranked fifth in the world in value during the year 2000 to 2002. The government has announced the national policy to promote Thailand as “the kitchen of the world”.

Responding to such situation, the National Bureau of Agricultural Commodity and Food Standards (ACFS) was established. However, various problems and difficulty seem to exist in promotion of the measures by ACFS. Food Safety issues are closely related to international trade negotiation, competitiveness in export and consumer protection. Therefore, the wide range of study needs to be implemented in order to strengthen the food safety policy and measures in Thailand.

Under that background, the Study for Strengthening the Food Safety Policy in Thailand was initiated by Japan International Cooperation Agency (JICA) Thailand Office in coordination with the National Bureau of Agricultural Commodity and Food Standards (ACFS), Ministry of Agriculture and Cooperatives (MOAC). The Study extended for 7 months from the end of March 2004 to the end of October 2004, covering a wide range of Food Safety issues and aiming at facilitating international food trade.

1.2 Objectives of the Study

The objectives of the study are:

- (1) To survey current situation and find problems on food safety in terms of food quality management and food safety system, as well as international system/ trend,
- (2) To analyze the problems and set the direction of future project ideas,
- (3) To formulate the appropriate collaboration projects for Thai government and food industry, and
- (4) To disseminate the information of food safety for food industries and consumers

1.3 Scope and Contents of the Study

The Study consists of two (2) phases, the Basic Study (Phase 1) and the Project Finding Study (Phase 2). The Basic Study was conducted from the end of March to the beginning of June

2004, including the Case Study, the Workshop and the Overseas Study (Japan). The Project Finding Study started in the middle of June 2004 and concluded at the end of October 2004, including the Field Survey, the Seminar and the Overseas Study (Japan).

The Basic Study clarified the problems and determined the direction of future project ideas in relation to the food safety in Thailand. At the end of the Basic Study, the Workshop was held to discuss the result of the Basic Study and the basic consensus was reached among participants on the direction for future projects. The Project Finding Study formulated the Candidate Projects, based on the result of the Basic Study and taking various relevant aspects into account. At the end of the Project Finding Study, the Seminar was held to report the result of the Study and also to share knowledge and experiences of Japan in the key areas of Risk Assessment, GAP implementation and Traceability system.

The Overseas Study (Japan) was conducted twice in the middle of April and in the beginning of August 2004 for clarification of the Food Safety System in Japan.

1.4 Reports

The following Reports were prepared and submitted by now:

- (1) Inception Report (April 2004)
- (2) Interim Report (June 2004)
- (3) Progress Report (September 2004)
- (4) Draft Final Report (October 2004)

The Final Report presented here summarizes the outcome of the Study, covering the subjects indicated in the Terms of Reference attached to the Agreement between JICA Thailand Office and the Consultant.

Chapter 2

Background

Chapter 2 Background

2.1 Thai Economy

Agriculture plays an important role in Thai economy. About three-quarters of the labor force is employed for the areas related to agriculture crops, livestock, forestry and fisheries. During the mid-1980s, agriculture sector accounted for about 25% of GDP in average and agricultural products occupied over 60% of all exports value annually. Although GDP of agriculture sector has decreased in the year 2003 sharing only 10.2 % to the total, agricultural products are still in an important position for export.

The Thai economy expanded quite well in the year 2003, in which the growing rate was 6.7%, higher than 5.4% in 2002. The growth in 2003 mainly came from the continuous increase in private consumption and exports. The Private Consumption Index grew about 5.2% whereas the export value increased at a high rate of 18.6%. Meanwhile, Private Investment Index expanded by 13.2%, strengthening the economy of Thailand. Besides these, government revenue increased remarkably by 13.6% in the fiscal year 2003, reflecting the rapid expansion in economic activities particularly in the household spending and business performances.

Thailand exported agricultural products and agro-industrial products sharing around 18.5% of the total export value, whereas principal manufacturing products account for 76.46%.

2.2 Food Sector in Thailand

Food sector is an essential area in Thailand since the government has a policy to promote Thailand as “The Kitchen of The World”.

As shown in Table 2-2-1, during 2000-2002, Thailand exported food to all over the world as the top 5 countries sharing about 2% of world exported value on food. Fishery product is the most valuable export product occupying about 34 % of total export value. Following fishery product was rice and cereal 16.47% whereas the third commodity, meat and meat product, shared 10.49 %. (Table 2-2-2)

Number of food factories in Thailand is summarized in Table 2-2-3 by commodity and size, being 9,439 factories in total.

Table 2-2-1 World Food Export by Country 2000-2002

Destination	Value (Billion Dollars)			Growth Rate (%)		Ratio (%)		
	2000	2001	2002	2001	2002	2000	2001	2002
European Union	180.38	182.98	195.95	1.44	7.96	41.76	41.83	41.83
USA	54.04	53.86	52.89	-0.33	-1.8	12.51	12.31	11.29
Canada	17.63	19.18	18.75	8.79	-2.24	4.08	4.39	4
China	13.56	14.22	16.16	4.87	13.64	3.14	3.25	3.45
Thailand	10.65	11.07	9.94	3.94	-10.21	2.47	2.53	2.12
Mexico	8.11	8.14	8.03	0.37	-1.35	1.88	1.86	1.71
Singapore	3.08	2.77	2.85	-10.06	2.89	0.71	0.63	0.61
Korea, Rep. of	2.66	2.52	2.46	-5.26	-2.38	0.62	0.58	0.53
Japan	2.17	3.06	2.21	41.01	-27.78	0.5	0.7	0.47
Others	139.63	139.6	159.16	-0.02	14.01	32.33	31.92	33.98
World	431.91	437.4	468.4	1.27	7.09	100	100	100

Reference : International Trade Statistics 2003, WTO

Table 2-2-2 Thai Food Export Trade Focused by commodities 2002-2003

Unit : Million Baht

Product Items	2002		2003		Variance (%)
	Value	Ratio (%)	Value	Ratio (%)	
Fishery Products	155,666	36.39	160,248	34.05	2.94
Rice and Cereal	71,061	16.61	77,511	16.47	9.08
Meat and meat product	46,495	10.87	49,390	10.49	6.23
Fruit	34,585	8.08	39,782	8.45	15.03
Sugar and Honey	29,939	7	39,108	8.31	30.62
Unspecified food	12,143	3.03	16,669	3.54	37.26
Pet Food	12,973	2.84	14,911	3.17	14.94
Vegetable	11,780	2.75	13,007	2.76	10.41
Cassava Pellet	8,212	2.08	10,453	2.22	27.28
Flour and Starch	8,903	1.92	9,782	2.08	9.87
Others	391,757	8.42	430,861	8.45	9.98
Total	427,793	100	470,617	100	10.01

Reference : National Food Institute, Thailand (Basic information supported by the Customs Department)

Table 2-2-3 Number of Food Factories in Thailand

Commodity	Small	Medium	Large	Total
Meat & Poultry	529	40	21	590
Dairy Products	72	9	16	97
Fishery Products	377	80	23	480
Fat & Oils	179	39	11	229
Fruit & Vegetables	411	57	15	483
Cereal Products	1,792	61	24	2,877
Starch, Grind & Pound Grind	1,308	49	36	1,393
Syrup & Sugar	61	11	53	125
Tea, Coffee & Confectionary	471	25	13	509
Seasonings	384	17	10	602
Ice	1,294	15	1	1,310
Feedstuff	518	66	18	602
Alcoholic Beverages	20	11	30	61
Non-alcoholic Beverage	232	17	23	272
Total	8,648	497	294	9,439

Source : Office of Industrial Economics : September 2001

Note : Size of factories are classified by Capital Investment (Million Baht).

Small : < 50, Medium: >=50, < 200 and Large : >=200.

2.3 Food Safety related Policy and Organization in Thailand

Under the 9th Economic and Social Development Plan (2002-2006), development strategies are geared towards of Thailand to growth with quality and stability in the long-run. Over the next 5 years plan Thailand strategies are aimed at increasing labor and capital productivity, which are crucial to strengthening and sustaining equitable growth and improved international competitiveness of the country.

Recently, The National Economic and Social Development Board (NESDB) have endorsed to establishment of the National Committee for Enhancing Competitiveness chaired by the Prime Minister, will responsible the National Agenda which is included all the competitive strategies of the national for instance, science and technology development, agricultural sector, human capital development, also includes scrutinizing plans and projects which will be implemented to increase competitiveness of the country.

In agriculture, Thailand are emphasizing the strategies focus on developing new kinds of value-added and nutritious foods, to accommodate with the new stringent standards and demands of a more discerning and definitely more health-conscious generation.

In 2002 the Government of Thailand has a vision to declare a new policy on “Food Safety” to improve the quality of Thai’s agricultural food producer in whole food chain to comply with the new practice of food system. By the way it can improve of quality of agricultural and agricultural food product that supplying to the markets not only in domestic but also in world market. Food Safety Policy and The Action Plan is done by the two(2) Ministries, Ministry of Agriculture and Cooperatives (MOAC) and Ministry of Public Health (MOPH) under co-operative with Ministry of Commerce (MOC) and Ministry of Foreign Affair (MFA).

The strategic plan is to responsibility on a heightened awareness on safe of food from primary production to finished process of export and import food product. Ministry of Public Health has a duty on import and domestic product, and Ministry of Agriculture has duty control from primary product until export.

In 2004, the Government of Thailand announced to launch the Project of “Food Safety Year.” And the National Bureau of Agricultural Commodity and Food Standards (ACFS) has been setting the new standards that cover all quality and safety-related issues in agricultural commodities and practices.

Specially, health and safety aspects of CODEX recommendation should be base on risk analysis. And Ministry of Agriculture and Cooperative issued of Logo call “Q Mark” to

secure safety in foods from agricultural input to final products. The producers who pass the inspection will get a “Q Mark Certificate” to assure quality of their products to the consumers. This system not only used for export agricultural and food products but also used for domestic market.

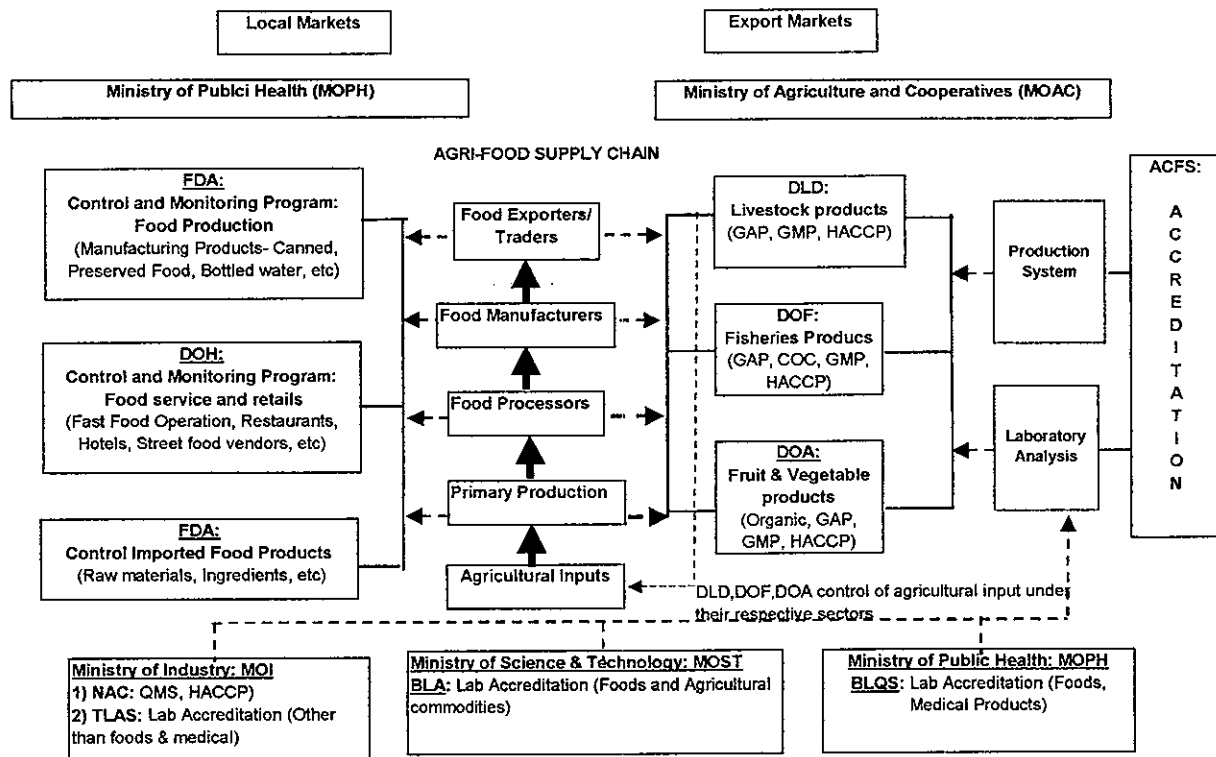


Fig. 2-3-1 ROLES SHARING ON FOOD SAFETY IN THAILAND

2.4 Food Safety System in Thailand

Thailand is one of the leading food exporters to the global markets. As a result of the recent Asian economic crisis, Thai economy was under difficult situation. The impact of these economic problems mainly relates with food & food related systems. To cope with the problems, the government has issued many policies in many sectors to recover the country economic situation and boost food exports i.e. “Tourism industry”, “Rural Business Development”, Small and Medium Enterprise business, “Thai Food and Restaurants for International Market”, Halal Food for Exports. In 2004, Thailand has issued the national policy and announced as the year of Food Safety for being “The Kitchen of the World”. Many projects by government agencies relating to food systems have been approved and launched aggressively according to this national policy.

The Government’s roles on Food Safety in Agri-food supply chain;

In Thailand, there are many laws and regulations and many government authorities responsible for food and food related issues along the agri-food supply chain, from primary producers through to consumers. There are approximately about 20 government agencies sharing these roles whether it is direct and indirect responsibility e.g.

- Ministry of Public Health (MOPH); Food and Drug Administration (FDA), Department of Health (DOH), Department of Medical Science, etc.
- Ministry of Agriculture and Cooperatives (MOAC); Department of Livestock and Development (DLD), Department of Fisheries (DOF), Department of Agriculture (DOA), The Office of Agricultural Commodity and Food Stands (ACFS), etc.
- Ministry of Industry (MOI); Thailand Industry Standard Institute (TISI), etc.
- Ministry of Science and Technology
- Ministry of Interior
- The Office of Prime Minister

Each government authority has a responsibility and involvement in different perspectives in terms of enforcement of laws and regulations. Key government authorities having direct responsibility for implementing National Policy on Food Safety are the Ministry of Agriculture and Cooperatives (MOAC) and the Ministry of Public Health (MOPH). In the year 2002, the government of Thailand issued National Policy to strengthen the food safety program for both local consumption and export, in which MOPH takes responsibility for monitoring of food import and local consumption, while MOAC is responsible for controlling and ensuring food quality and safety for export.

The Ministry of Public Health (MOPH), there are two (2) government authorities mainly

involved in food safety; Food and Drug Administration (FDA) responsible for regulating national laws and regulations regarding food and related issues (food production, food labeling and imported foods) all over the Kingdom, and Department of Health (DOH) is responsible for ensuring food safety for food handling, services and retails for local consumers. Many proactive steps have been taken by the government and/or regulatory agencies – FDA has issued and regulated the food regulation titled “Code of Practice General Principle of Food Hygiene”, Food Act No. 193 (B.E. 2543), Subject: Manufacturing Processes, Equipment and Storage of Food Products this regulation covers food products 57 product groups. In the same period, many food safety programs by government have been launched and campaigned to the public to promote food safety awareness among consumers e.g. “Clean Food – Good Taste” by Health Department, “Safety Food - Good Health” by Medical Science Department. Food Hygiene program for restaurants and street food vendors, so called, “Green Star Scheme” launched by the Bangkok Metropolitan in 1999 to promote basic food hygiene and consumer awareness.

The Ministry of Agriculture and Cooperatives (MOAC) is responsible for ensuring that quality and safety of food product for exports. Based on existing government’s functional structure under the MOAC, each department plays its role and being competent authority in each respective sector to support and facilitate exporting activities e.g. The Department of Fisheries (DOF) responsible for fisheries products, The Department of Livestock and Development (DLD) responsible for livestock products and The Department of Agriculture (DOA) responsible for fruit and vegetable products. National Bureau of Agricultural Commodity and Food Standards (ACFS) (the department under MOAC), subject to the enforcement of the law, has just started its Accreditation activity to accredit Certification Body (CB) for food safety system (i.e. GAP, GMP and HACCP).

Agri-food industry tries to improve production system to meet the requirement of international standard, with the support by DOA, DOF and DLD of MOAC, the Department of Medical Science (DMS) of MOPH, the Thai Industrial Standards Institute (TISI) of Ministry of Industry (MOI).

Each department has its own system to provide food safety certification such as Good Manufacturing Practice (GMP), Code of Conduct (COC), Good Agricultural Practice (GAP) and Hazard Analysis Critical Control Point (HACCP). Before ACFS become a Accreditation Body, there was no accreditation program for GAP, GMP and HACCP by DOA, DOF and DLD.

The level of enforcement of food safety regulation in Thailand seems to need more attention. Voluntary food safety related certification scheme by independent third party is increasingly demanded. These schemes include organic, EUREPGAP, GMP, HACCP, SQF2000, BRC

and ISO9000. There are about 30 certification bodies in Thailand currently providing various food safety certification services for food industry in Thailand. Number of HACCP certified companies (for medium and large operations) is estimated at 400 - 450 companies (2003), being less than 5 % to the total number of food companies.

2.5 Food Safety System in Japan

2.5.1 Food Safety Commission

(1) Food Safety Basic Law

Recently there are many changes in food safety situation in Japan because of;

1. Outbreak of Bovine Spongiform Encephalopathy (BSE), *E.coli* O157
2. Problem of pesticide residues on imported vegetables
3. Problem of deceive in labeling

As a result from the above anxiety, food safety issues have been concerned in Japanese consumers.

Japanese Government enacted the Food Safety Basic Law in May 2003 and promoted with a several key food safety policies on food safety.

(2) Food Safety Commission

Food Safety Commission was established in the Cabinet Office on July 1, 2003, and now plays a central role for food safety in Japan.

Food Safety Commission is an organization to undertake risk assessments, being independent from risk management organization such as Ministry of Agriculture, Forestry and Fisheries (MAFF), and Ministry of Health, Labour and Welfare (MHLW). The Commission comprises 16 Expert Committees by specialty.

The Commission has four (4) main tasks as follows by;

- Conducting risk assessments on food in scientific, independent and fair manner
- Making recommendations to relevant ministries based on the results from the risk assessment
- Implementing risk communication among stakeholders such as consumers and food-related business operators
- Responding to food-borne accidents and emergencies

(3) Food Safety Commission as Risk Assessment Institution

Based on the procedure of Codex Alimentarius Commission, it's absolutely necessary for the risk assessment institution to secure objectivity and independency. But the relation of independency between risk assessment and risk management is different in each country.

- Independent from risk management institution: EU, French, Germany and Japan
- Under risk management institution: England, New Zealand and US

Functions and organization of Food Safety Commission in Japan are shown below.

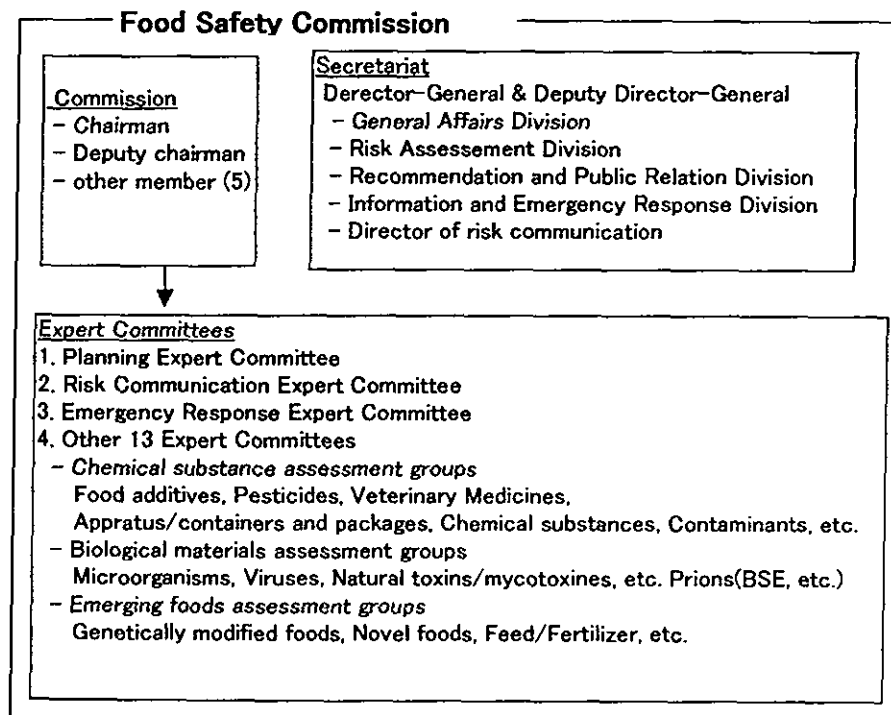
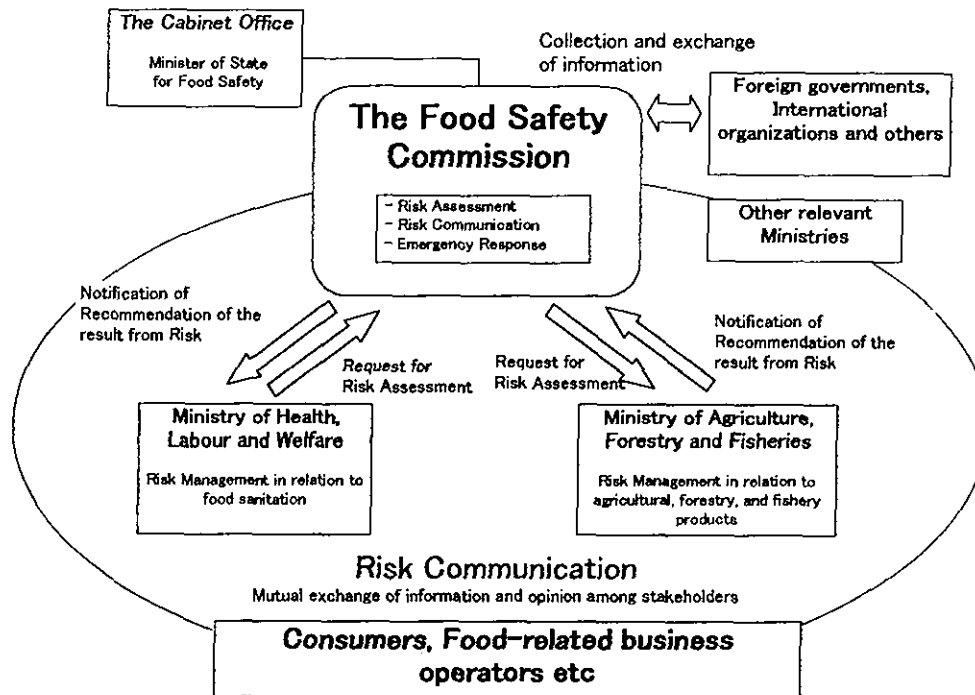


Fig. 2-5-1 Function and Organization of Food Safety Commission in Japan

2.5.2 Imported Food Inspection System

(1) Quarantine and Inspection procedure for Imported Foods, Agricultural and Fisheries Products are as follows:

First step:

- Animal quarantine at animal quarantine station under Domestic Animal Infectious Disease Control Law (MAFF)
- Plant quarantine at plant protection station under Plant Protection Law (MAFF)

Second step:

- Sanitary inspection at quarantine station under Food Sanitary Law (MHLW)

(2) Import Notification by Food Sanitation Law

Import Notification is submitted to a Quarantine Station under Ministry of Health, Labour and Welfare (MHLW). At the Quarantine Station, food sanitation inspectors will examine document and oversee the foods and products to comply with the Food Sanitation Law, and depend on the requirement, Japan has three kinds of inspections.

MHLW has some simplified and expedite systems of imported procedures of food and related item for particular cases.

2.5.3 Accreditation System related to Food Safety in Japan

(1) System Accreditation in Japan

In case of management system such as ISO9000 or ISO14000, Japan Accreditation Board for Conformity Assessment (JAB) is one of accreditation body (AB) that is internationally recognized as third party.

As for HACCP, Ministry of Health, Labour and Welfare (MHLW) has incorporated its concept into the food sanitation law. However, it is limited to six (6) commodities i.e. milk, dairy products, processed meat, ground fish meat, pouch-packed food and soft drinks, and it is now optional for organizations to apply HACCP.

(2) Laboratory Accreditation System in Japan

The AB for laboratories on ISO17025 is JAB, JNLA, JCLA, VLAC and NITE depending on the area, of which JAB covers a wide range. Domestic mandatory laws usually supersede any accreditation scope of the AB.

2. 6 Cooperation by International Donors

Various types of cooperation projects and studies related directly or indirectly with Food Safety have been implemented in Thailand in the past decades, mostly for specific areas.

Japan International Cooperation Agency (JICA) extended “Project-type Technical Cooperation” to the Government of Thailand for the period of six (6) years from April 1994 up to March 2000 including one (1) year’s extension. The cooperation aimed at ensuring Food Sanitary for the benefit of consumers, and eventually reducing various kinds of food-borne diseases in Thailand. The main target foods were set at drinking water and cow milk. The evaluation study at the end of the cooperation reports that the objectives have been attained to a fair degree, with a remarkable decrease in unsanitary foods during the cooperation period.

Other cooperation projects include the Project for foodstuff products (2003-2005) undertaken by EC aiming at MRA of ASEAN in line with EU’s requirement, the Development Study (1997-1999) by German Technical Cooperation Agency (GTZ) for the purpose of pesticide reduction, and the Training Program on GAP/GMP/HACCP of fruit and vegetables (2003-) implemented by FAO for the government officers (DOA, MOAC).

On the other hand, this Study for Strengthening the Food Safety Policy in Thailand under JICA Thailand Office, features two (2) points. First, it covers a wide range of Food Safety issues. Secondly, it aims to facilitate international food trade through improvement of the Food Safety System in Thailand.

The Food Safety has become one of the most important issues over the world nowadays, and emerged as a main topic in international trade. As described before, Food Sector in Thailand plays an important role in national economy. From these points of view, this Study is of great significance and urgency for the benefits of Thailand and other countries concerned.

Chapter 3

Concept of Strengthening the Food Safety in Thailand

Chapter 3 Concept of Strengthening the Food Safety in Thailand

3.1 Background and activities related to food safety

In 2002, the Government of Thailand established a vision to declare a new policy on "Food Safety" to improve the quality of Thai's agricultural food products in the whole food chain to comply with the new practice of food system. By that way, it becomes possible to improve the safety and quality of agricultural commodities and food that are supplied not only to domestic market but also to the world market. Food Safety Policy and the action plan is undertaken by the two (2) Ministries; Ministry of Agricultural and Cooperatives (MOAC) and Ministry of Public Health (MOPH) in cooperation with Ministry of Commerce (MOC) and Ministry of Foreign Affair (MFA)

The National Bureau of Agricultural Commodity and Food Standards (ACFS) is a new organization established in October 2002, under the comprehensive government restructuring program. To achieve the objectives and to support the Government Policy of Food safety Year including facilitating the trade negotiation of agricultural food products, ACFS has established and maintained the national standards of agricultural commodities and food in harmonization with the international standards in order to strengthen competitiveness in the world market.

During the year 2003-2004, ACFS set the strategic plan of food safety in order to expedite the operation to establish the standards of agricultural commodity and food throughout the food chain. In addition, ACFS also aimed to promote Thailand to be the "Kitchen of the World". In this aspect, ACFS has a function to engage in the trade negotiation related to agricultural commodities based on the technical and scientific information, and also to cooperate with other countries as well as relevant international food organizations.

3.2 ACFS as a National Focal Point

To assure the member countries under WTO, ACFS functions as a national focal point and ASEAN food safety working group for:

1. The World Trade Organization Agreements on the application of Sanitary and Phytosanitary measure (WTO/SPS Agreements) and on Technical Barrier to Trade

(WTO/TBT agreement)

2. The Joint FAO/WHO Food Standard Programme (Codex)
3. The Office International des Epizooties (OIE)
4. The International Plant Protection Convention (IPPC)

The Procedure of conducting MRA (Mutual Recognition Agreement) between the trade-partner countries was developed and established by ACFS. There was a readily link with organizations on food safety such as AQIS, AQSIQ and SANCO. The MRA activity of ACFS with Singapore was done under the project STEER in year 2003, while the activity with Australia has just started recently. ACFS are now on process of preparing the documentation, technical information to discuss with those countries to be mutually developed and may eventually lead to the mutual agreement.

To achieve the challenging objectives, the road map has been launched by ACFS as shown in Appendix 2-1. The strategies cover as follows;

- To develop standards and standard procedure for production of agricultural commodities and food products
- To inspect and certify products standards at farm-level production and processing stages as well as authorize both public and private agencies to certify the standards for agricultural products and food products for exports
- Monitor and evaluate on-going programmes and measures on food safety
- Engage in international negotiations on technical aspects of the bilateral level and with the international organizations to ensure fairness of the use of Non-Trade Barriers (NTBs)
- Function as the Central Information Center and Traceability on food standards and standards of agricultural commodities

3.3 Concept of Food Safety and Quality Management System

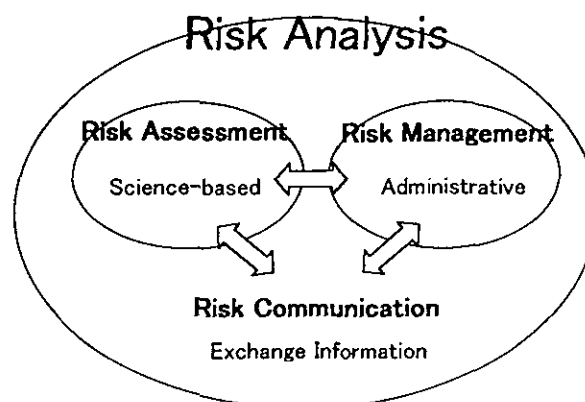
Food safety has become one of the most important issues over the world. As described before, in Thailand, the recent outbreak of avian influenza and detection of antibiotic residues in shrimps and pesticide residues in vegetables exported from Thailand have forced the government and private sectors to strongly recognize the necessity of strengthening the food safety and quality management system. Food safety is becoming a new trade barrier in international market. On the other hand, food sector is one of the most important areas in Thailand. The government has a policy to promote Thailand as “the kitchen of the world”.

In response to the internal and external concerns on the food safety as above mentioned, the National Bureau of Agricultural Commodity and Food Standards (ACFS) was established under the Ministry of Agriculture and Cooperatives (MOAC) in October 2002. The ACFS is acting as a national single body responsible for all issues relating to agricultural and food products for export. In November 2003, the cabinet approved that ACFS acts as a national accreditation body for all export agricultural commodities/food and some imported foods. Being a national accreditation body for Food Safety and Quality Management system for Agri-food production, ACFS is well positioned in facilitating Thailand's export for agricultural commodities and food products by establishing the standard for agricultural commodity and production systems. The role of ACFS as coordination body in Food Safety and Quality Management System is shown in Appendix 2-2.

3.4 Food Safety Framework in Thailand

Under the above-mentioned background, three (3) key objectives for strengthening the Food Safety in Thailand have been led from risk analysis point of view as follows;

- a. Promotion of the process of Risk Assessment in the Whole Food Supply Chain (from farm to table) (Risk Assessment)
- b. Facilitation of Quarantine, Inspection and Certification in food processing industries (Risk Management)
- c. Exchange of information to comply with the requirement of international and domestic markets (Risk Communication)



In next page, constraints and necessary countermeasures in each key objective on Food Safety Framework are described.

Table 3-1 Food Safety Framework and Key Objectives

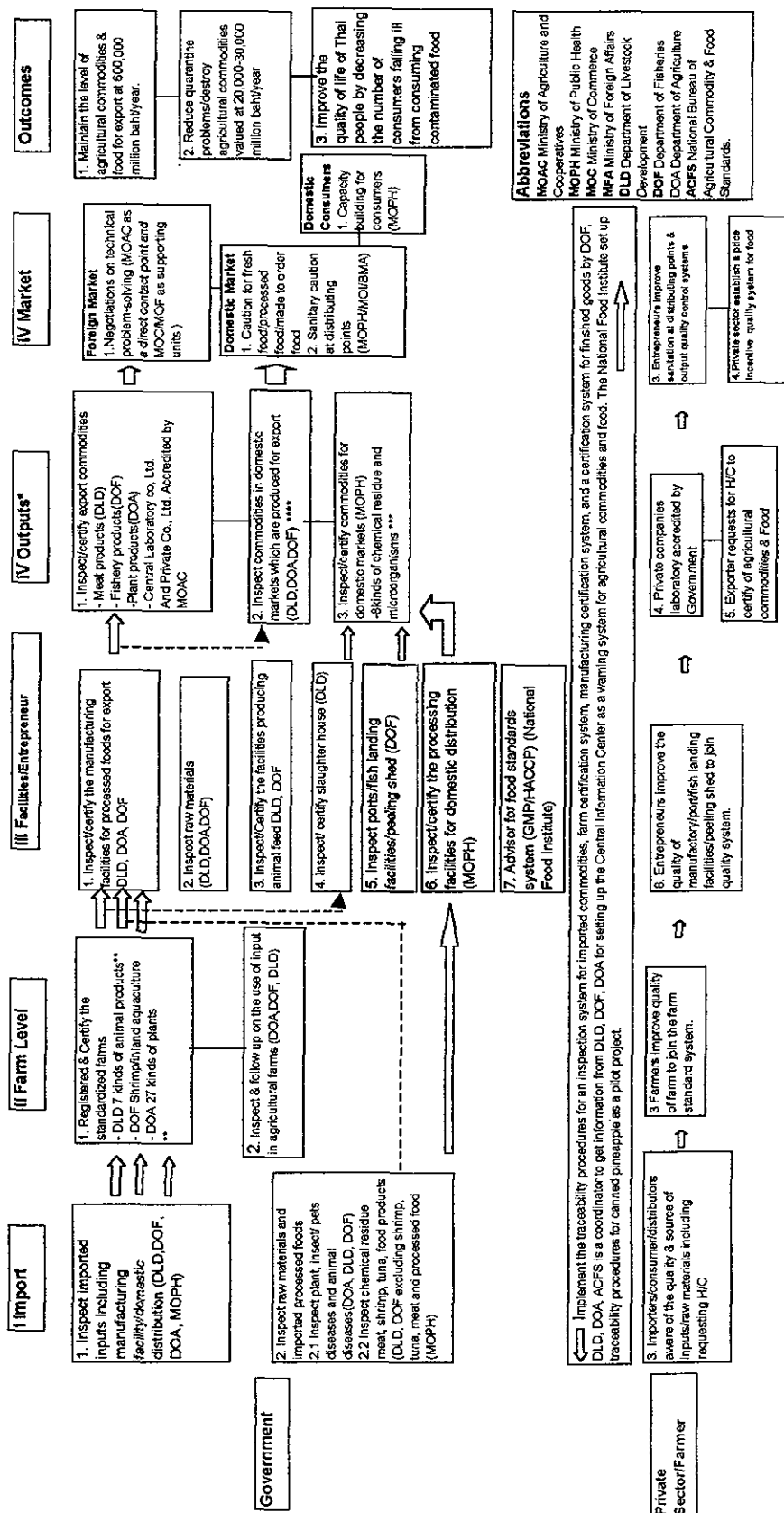
Key Objectives	Constraints	Countermeasures
Promotion of the Process on Risk Assessment in the Whole Food Supply Chain	<p>Cases of incident in regard to food safety constantly reported to the public and made aware consumers (e.g. <i>E. coli</i>, BSE, antibiotic and pesticide residues). This has been brought into the attention of all stakeholders (primary producer, suppliers, process, manufacturer, retailer and regulator, regular bodies in each country). They are increasingly safeguarding the public and preventing consumer from food poisoning. Without the effective system, Primary producers and manufactures are at risk of producing defected and contaminated food. Some of them have in place Food Safety and Quality Management Systems (GAP, GMP, HACCP). However, the implementation of the system may not be effective due to the system development not based on an effective risk assessment process under their business environment.</p>	<p>Improvement of risk assessment as training program</p> <p>Improvement of primary production system and awareness in food safety in farm</p> <p>Improvement of implementing capacity in GAP, GMP, HACCP</p>
Facilitation of Quarantine, Inspection and certification in food processing industries	<p>In Thailand the number of food factories is 9,439 companies (2002), and most of export companies are certified by GMP/HACCP, but small and medium companies are reported to be unable to meet the requirement for GMP/HACCP, due to limited capability and competency in the accreditation process such as shortage of analysis facilities, well-educated human resource, accreditation knowledge etc.</p> <p>Besides these, the system for certification is not well harmonized, each organization inspect and certify system based on their scheme and criteria. And need more human resources in ACFS and other relevant departments for accreditation.</p>	<p>Need more Human resource development for</p> <ul style="list-style-type: none"> - Accreditation and certification body - Laboratory - Pre-certification system

Exchange of information to comply with requirement of international and domestic markets	<p>Agro-industry is one of the important industries in Thailand and these products are mostly highly perishable and will lose their marketability within limited days on the shelf. Quality of the product sometimes loss due to the lack of knowledge of the people involved and poor supply chain management. Education of proper handling of these crops to the Agro-industry is one of the important industries in Thailand and people along the supply chain are a major reduction of post-harvest loss.</p> <p>Recently most consumers look for more information in food origin, allergen etc. In Thailand traceability system was implemented many years ago, the running network needs to be updated to manage the complexity of the information. Furthermore, international information such as standard & regulation of importing countries are very important for agro-industry and consumer awareness. Therefore exchanging information among relevant stakeholders plays an important role in providing for the effective communication system.</p>	<p>Need more Information</p> <p>Accessibility System</p> <p>Improvement of traceability system including labeling and document control system</p> <p>Human resource development for supply chain management</p>
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Road Map of Food Safety

2004

Appendix 3-1



Note:

* Output IV come from II Farm directly.

** 7 kinds of products: Dairy cattle, Beef, Broiler, Swine, Duck, Egg, Chicken Stock/Duck Stock ** 27 kinds of plants = Durian, Mangosteen, Longan, Lychee, Mango, Pineapple, Papaya, Rambutan, Tangerine

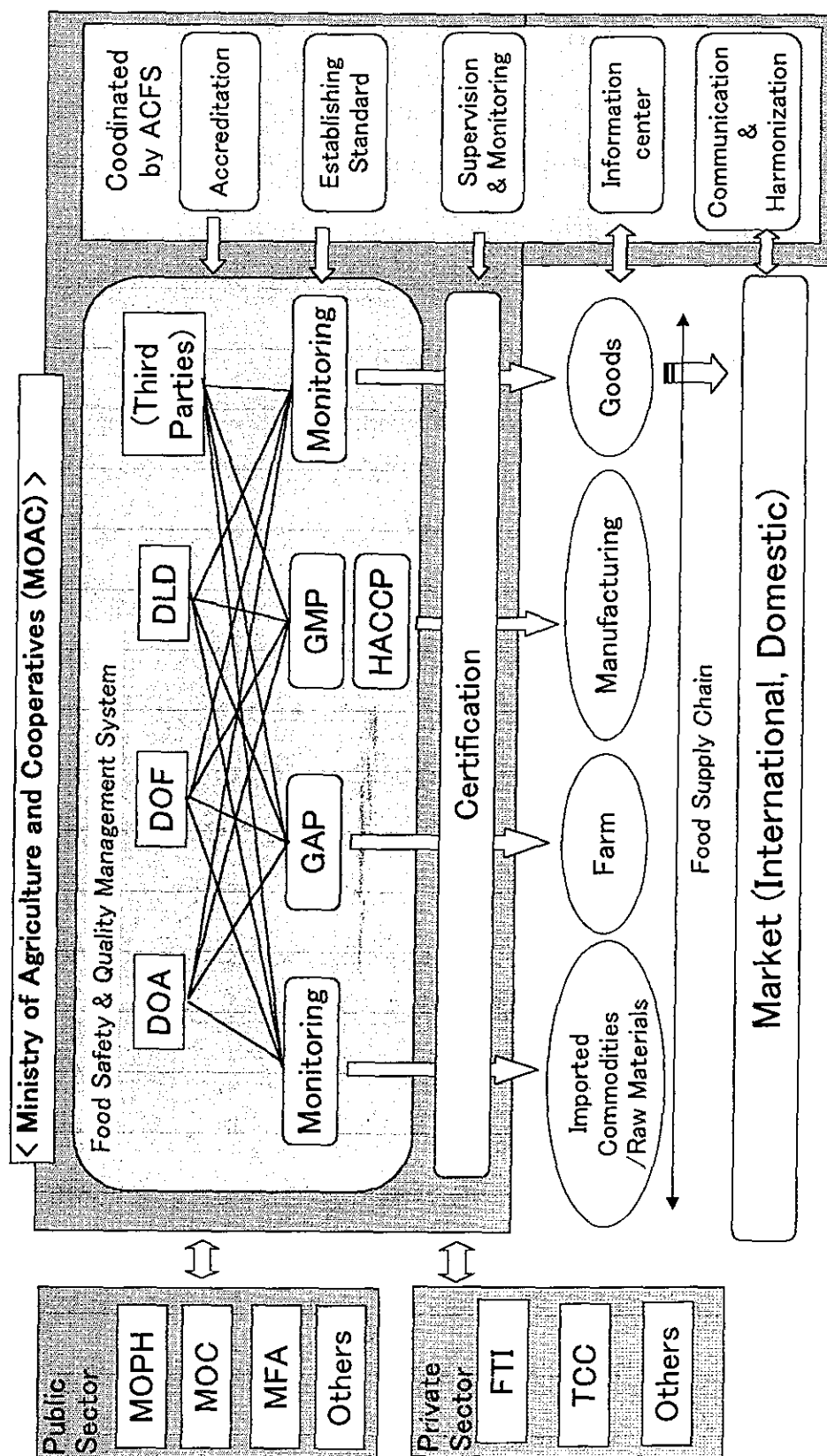
*** 8 kinds of Chemical Residue= Borax, Pesticide, Sodium Hydroxide, Salicylic Acid, Fomalin, Beta-agronist, Chloramphenicol, Nitrofurantoin

**** Meat and Milk from slaughter house and Milk Collecting Center are inspected by DLD

National Bureau of Agricultural Commodity and Food Standards

Concept of Food Safety and Quality Management System in Thailand

Appendix 3-2



MOPH: Ministry of Public Health, MOC: Ministry of Commerce, MFA: Ministry of Foreign Affairs
FTI: Federation of Thai Industry, TCC: Thai Chamber of Commerce

Chapter 4

Case Study by Commodity

Chapter 4 Case Study by Commodity

The Case Study was conducted by collecting relevant information through documents and websites, and the field survey. The field survey was carried out for the commodities of livestock, seafood and fruit/vegetables by using questionnaire, individual interview and site visit from the end of April up to the middle of May 2004. Information was collected from various sources (18 for livestock, 32 for seafood and 18 for fruit/vegetables, mainly private sectors) in various production/marketing areas. There were some difficulties in the site visits on livestock under the sensitive situation with bird-flu. The study for seafood focused on shrimp since the shrimp industry shares more than 60 % of export value in fishery sector.

Information collected through the field survey was categorized and analyzed by cause/effect logic. Problems found in the Case Study and Project Ideas formulated for solution of the problems are summarized by commodity hereunder:

4.1 Livestock

4.1.1 Findings of the Study

The Case Study for Livestock clarified that more improvement is needed for the following areas:

Key Problems:

1. Food Safety Awareness in primary producer
2. Food Safety Education
3. Food Safety Information
4. Implementation of Traceability
5. Laboratory Competency

4.1.2 Project Ideas

Analysis of the above-mentioned problems led to the formulation of the Project Ideas as below:

Project Ideas:

1. Strengthening of GAP implementation in primary production
2. Establishment of Food Safety Training Program including evaluation system
3. Food Standard and Regulation International Information Center
4. Strengthening of Traceability system
5. Strengthening of Accreditation of Food Laboratories

4.1.3 Risk Assessment and Risk Management of Avian Influenza (AI)

The outbreak of bird-flu compelled Japan to ban the import of Thai made chicken in the beginning of the year 2004. Responding to such situation, a series of quick and effective actions were taken between the Government of Thailand and Japan through close communication by the officials of both governments in terms of Risk Assessment and Risk Management on Heat-Processed Chicken. This case is recognized as a good lesson for future possible incident.

Fig. 4-1-1 shows a series of discussions for establishment of standard for heat-processed chicken between Thailand and Japan to solve the export problem of heat-processed chicken.

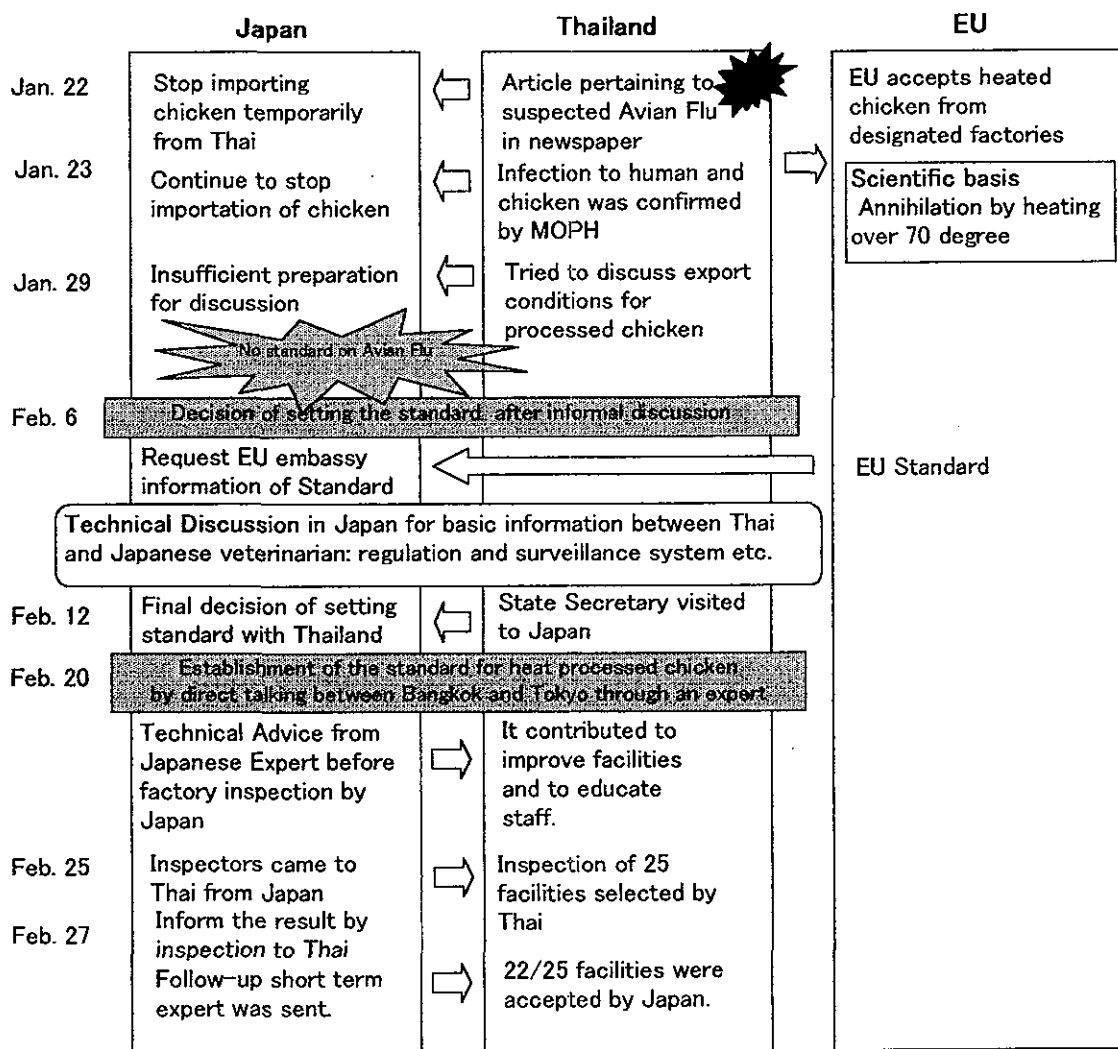


Fig. 4-1-1 Experience of Heat Processed Chicken Case

4.2 Seafood

4.2.1 Findings of the Study

Result of the Case Study for Seafood focused on the following areas as key issues that need more improvement:

Key Problems:

(Primary Production)

1. Training on Food Safety
2. Implementation of traceability system
3. Cold chain system
4. Inspection and laboratory analysis system
5. Access to relevant information
6. Quality control in shrimp production

(Secondary Production)

7. Quality assurance on raw material supply
8. Traceability system
9. Packaging technology
10. Dissemination of Pre-certification system for export.

4.2.2 Project Ideas

For solution of the above-mentioned problems, the following Project Ideas were formulated:

Project Ideas:

1. Improvement of Training for Human Resources Development
2. Improvement of Traceability in Seafood Chain
3. Improvement of Inspection System in Seafood Chain
4. Establishment of Cold Chain Technology System
5. Establishment of Information Center for Food Service
6. Strengthening the Pre-Certification System for Export
7. R&D for Standard Quality of Shrimps

4.3 Fruit and Vegetables

4.3.1 Findings of the Study

Result of the Case Study for Fruit and Vegetables found the following issues to be more improved:

Key Problems:

1. Number and competency of Extension Officers
2. Incentive for Improvement of primary production
3. Implementation of laws/ regulation/ standards
4. Practical Postharvest Technology
5. Capability of Accreditation Body and Certification Body
6. Communication between the Governments of Thailand and Japan

4.3.2 Project Ideas

The following Project Ideas were formulated to solve the above-mentioned problems:

Project Ideas:

1. Strengthening the Agriculture Extension capacity
2. Improvement of primary production system
3. Strengthening accreditation capacity on production system certification
4. Strengthening the capacity of food laboratory
5. Improvement of food packaging
6. Improvement of post harvest treatment and processing
7. Improvement of storage/ transportation/ cold chain system
8. Strengthening the program for implementing of laws/ regulations/ standard

Suggestions:

Strengthen the communication system on Food Safety between the Governments of Thailand and Japan by setting up a mechanism, the Committee on Food Safety, as a tool to facilitate the projects and discuss the issues related to the Food Safety.

Chapter 5

Project Formulation

Chapter 5 Project Formulation

5.1 Review of the Results of the Basic Study

5.1.1 Problem Analysis

(A) Problems by Commodity

As described in Chapter 4, the main problems raised by private sectors for the commodities of Livestock were summarized as the necessity of more awareness, knowledge, dissemination of information and also more improvement of traceability and laboratory competency. For Seafood, the main problems were the necessity of more improvement in training, food supply chain (packaging/ traceability/ cold chain/ pre-certification), laboratory competency, quality assurance, and access to information. The problems for Fruit and Vegetables were mainly the necessity of strengthening the communication between governments and between government & private sector, more improvement in accreditation/certification, primary production and postharvest technology.

Described above are the problems raised by private sectors. To respond those problems, Thai government has been taking various actions as described before in Chapter 3. However, there seems to exist some areas where more improvement is still needed. Detail analysis in this respect is shown on Fig. 5-1-1.

(B) Overview of Problems

Correlation of the problems summarized above has been analyzed by cause/effect logic in the form of Problem-Solving Structure (Fig. 5-1-1), where the problems have been categorized to GAP Implementation, Food Supply Chain and Accreditation System.

Inappropriate GAP Implementation System causes insufficient training, monitoring system and farmers' awareness, and also difficulty in access to information, eventually leading to the problems on raw materials (pesticide residues, antibiotics, etc.) and the outbreak of Food Safety related incidents (bird flu, etc.).

Insufficient awareness on Food Supply Chain results in insufficient implementation of cold chain/traceability system and inappropriate packaging/postharvest technology, and also incompliance with the Food Sanitation Law of Japan, all of which lead to the problems on Quality and Safety (contamination with pathogenic microorganisms, foreign materials, etc.).

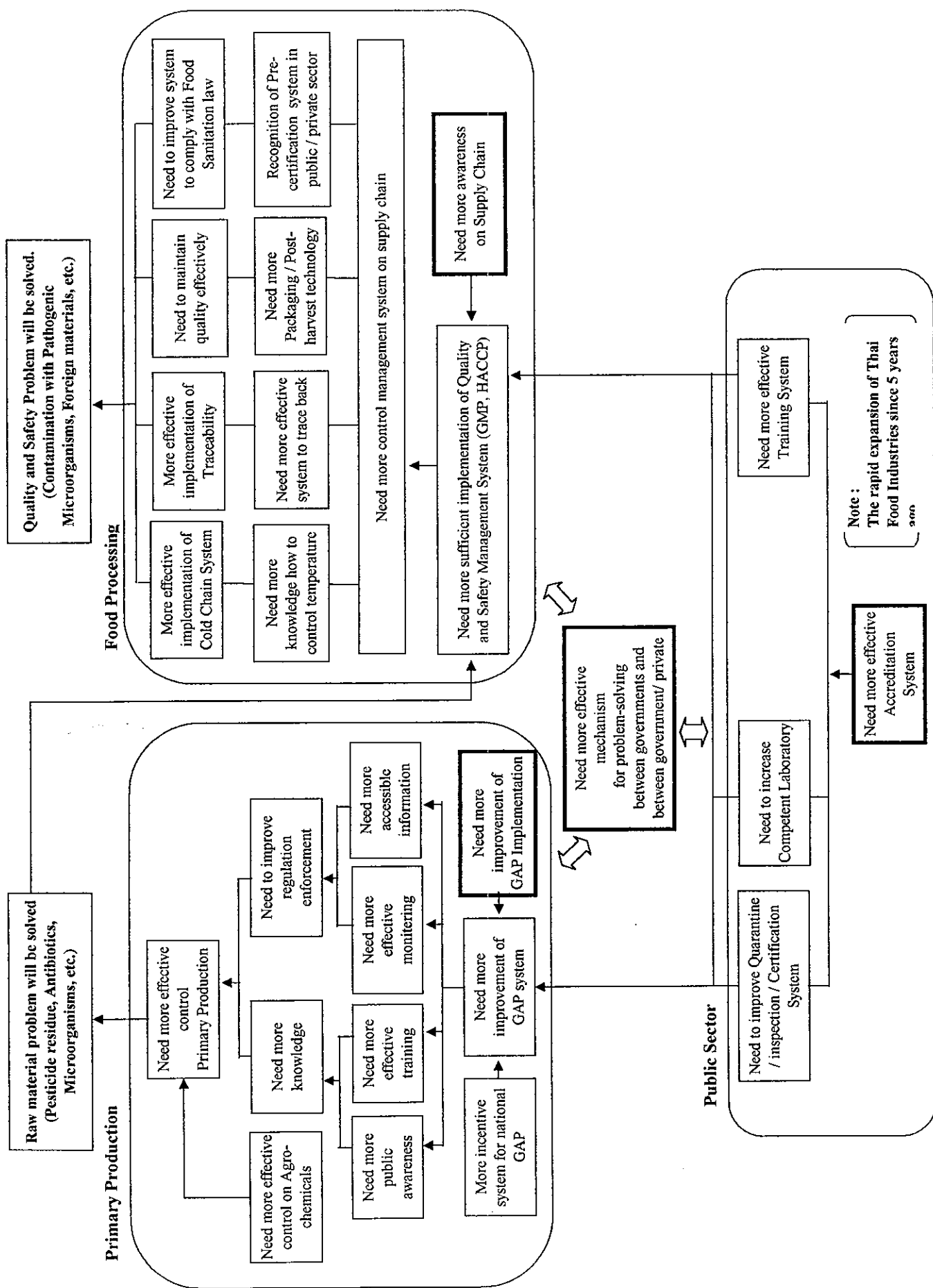


Fig. 5-1-1 Problems-Solving Structure on Food Safety in Thailand

Ineffective Accreditation System leads to ineffective certification and training system, and insufficient competency of food laboratories, which gives an adverse impact on implementation of GAP and Quality/Safety Management System.

On the other hand, insufficient communication mechanism between governments is closely related to each problem described above.

5.1.2 Project Ideas

As described in Chapter 4, the Projects Ideas were formulated for solution of the problems. The idea for strengthening the communication between governments was summarized as the “Suggestion”. The Project Ideas formulated for solution of all the other problems can be classified to (a) Strengthening Accreditation/Certification, (b) Strengthening Primary Production, (c) Improvement of Food Supply Chain, (d) Strengthening Pre-Certification System, (e) Strengthening Traceability System, and (f) Establishment of Information Program.

5.2 Formulation of Candidate Projects

5.2.1 Field Survey

In the Project Finding Study, the Study Team visited a number of government organizations concerned, in addition to private sectors, to collect relevant information, opinions and views on Food Safety System in Thailand. The Team had a series of meetings with the implementing agencies assumed for the Candidate Projects to discuss the matter in detail. Also, the Overseas Study (Japan) was conducted for further clarification of the Food safety System in Japan. All those were reflected in formulating and justifying the Candidate Projects.

5.2.2 Approach to the Project Formulation

The Project Finding Study formulated the Nineteen (19) Candidate Projects under the “Umbrella Program” for strengthening the Food Safety Policy in Thailand, taking the following points into due consideration:

- (1) Concept for Strengthening the Food Safety set by the Government of Thailand (as summarized in Chapter 3)
- (2) Key Problems raised by private sectors in the Basic Study (as summarized in Chapter 4)
- (3) Key Project Ideas formulated in the Basic Study for solution of the problems (as summarized in Chapter 4)
- (4) Opinions/ views from relevant government organizations in the Project Finding Study (as described above in 5.2.1)

As a result of the study described above, the Nineteen (19) Candidate Projects have been categorized to (A) Strengthening the Accreditation Capacity; (B) Strengthening the GAP Implementation; and (C) Improvement of Food Supply Chain.

The Nineteen (19) Candidate Projects under the “Umbrella Program” are as follows:

Umbrella Program:

Program for Strengthening the Food Safety in Thailand

Umbrella Program Components:

Category-A: Projects for Strengthening the Accreditation Capacity

- A-1 Strengthening the Accreditation Capacity on Production System Certification
- A-2 Strengthening the Accreditation Capacity on Training Program for Food Safety
- A-3 Strengthening the Accreditation Capacity on Food Laboratories

Category-B: Projects for Strengthening the GAP Implementation

- B-1 Strengthening GAP implementation in primary production of fruit and vegetables
- B-2 Strengthening GAP implementation and Laboratory capacity in shrimp production
- B-3 Strengthening GAP implementation in Poultry Production
- B-4 Quality Assurance in Pesticide Use and Impact Management in Thailand
- B-5 Improvement of Risk Assessment Program

Category-C: Projects for Improvement of Food Supply Chain

- C-1 Establishment of Information System on Food Safety, Regulations and Standards, Alert and Awareness
- C-2 The Improvement of Traceability System for fresh fruit and vegetable
- C-3 Strengthening of Traceability System for CoC Shrimp Production
- C-4 Strengthening of Traceability System for Poultry products from raw materials to the end products
- C-5 Strengthening the Pre-certification System for Export Processed Fishery Products and HACCP Implementation
- C-6 Strengthening and Improvement of Cold Chain System of Shrimp and Human Resource Development
- C-7 Strengthening and Improvement of Cold Chain System of Poultry Product and Human Resource Development
- C-8 Improvement of Packaging Systems in Fruit and Vegetables
- C-9 Improvement of Packaging Systems in Fishery Products
- C-10 Improvement of Packaging System in Livestock Products
- C-11 Improvement of Supply Chain Management for Fruit and Vegetables: Post Harvest Handling and Cold Chain Management

Approach to the formulation of the Candidate Projects is outlined in Fig. 5-2-1. Sharing knowledge and experience of Japan by implementing the Candidate Projects will greatly contribute to strengthening the Food Safety in Thailand and eventually facilitating the external food trade procedure.

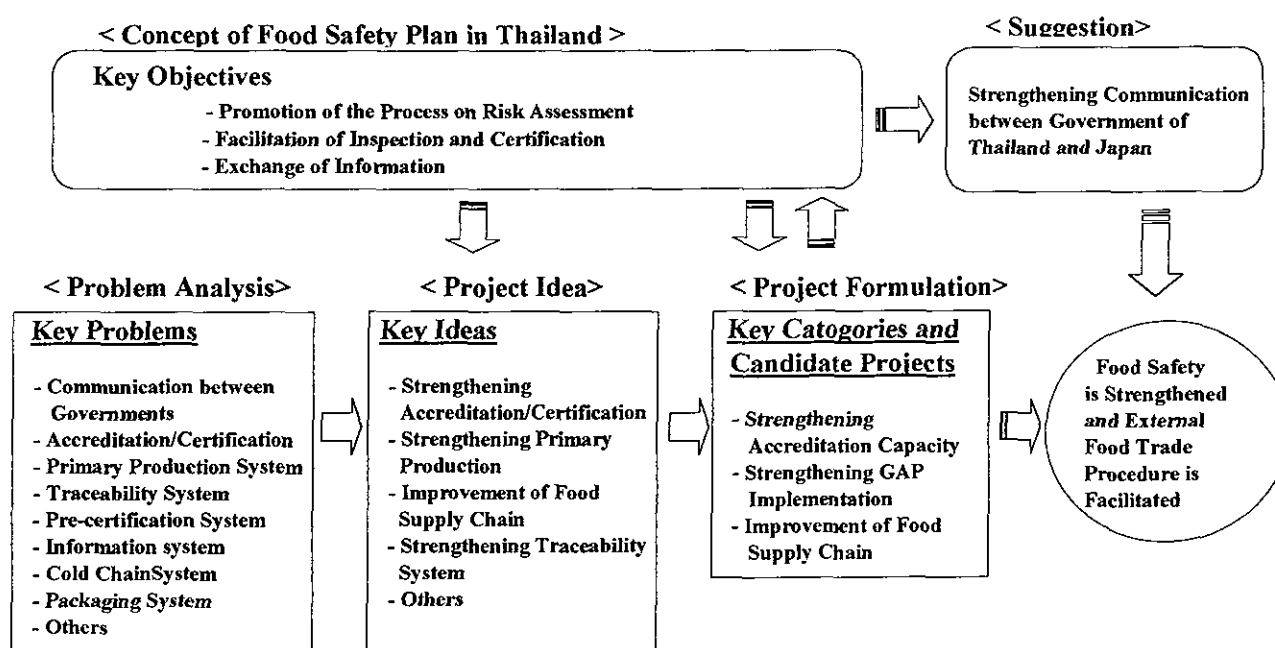


Fig. 5-2-1 Approach to the Formulation of the Candidate Project and strengthening Food Safety

5.2.3 Component Projects

Outline of the Nineteen (19) Candidate Projects under the “Umbrella Program” are summarized in the form of “Summary of Candidate Project” as per the following sheets:

Category-A

Projects for Strengthening the Accreditation Capacity

Summary of Candidate Project (Project Code: A-1)

1. Name of Candidate Project

Strengthening the Accreditation Capacity on Production System Certification

2. Implementing Agency

Office of Commodity and System Standards Accreditation (CSSA),
National Bureau of Agricultural Commodity and Food Standards (ACFS),
Ministry of Agriculture and Cooperatives (MOAC)

3. Type of Scheme

Technical Cooperation Project

4. Project Area

Bangkok

5. Project Period

3 years

6. Rationale

ACFS/ CSSA (Accreditation Body on Production System)

In response to the internal and external concerns on the food safety issues, the National Bureau of Agricultural Commodity and Food Standards (ACFS) was established under the Ministry of Agriculture and Cooperatives (MOAC) in October 2002, according to the approval of cabinet in March 2002, in the process of the governmental restructuring. The ACFS is acting as a national single body responsible for all issues relating to agricultural and food products for export. In November 2003, the cabinet approved that ACFS acts as a national accreditation body for all export agricultural commodities/food and some import foods.

The Office of Commodity and System Standards Accreditation (CSSA), a division under ACFS, is an accreditation body providing accreditation process to facilitate export of agricultural and food products. Certification schemes to be covered by CSSA for accreditation are production system, testing laboratories, inspection bodies, training program, auditor registration and products, including the future plan.

This project focuses on strengthening the accreditation capacity on production system. The CSSA is scheduled to start its accreditation activity for this scheme within the year 2004. The CSSA plays a key role in providing international accreditation structure for certification bodies (government and private) in terms of food safety systems in agri-food industry.

Present situation of accreditation on food production

Accreditation system on food production helps reduce risk for business and its customers by assuring them that accredited bodies (i.e. certification, inspection or testing body) are competent to carry out the work they undertake. For suppliers, it builds up consumers' confidence in its products or services and build up market confidence in its consistent capability with regard to the manufacture or delivery of products or services as agreed. Current situation, there are two (2) Accreditation Bodies (AB) providing accreditation services that relating to food safety; National Accreditation Body (NAC) and The National Bureau of Agricultural Commodity and Food Standards (ACFS) (see also Table A-1-1). According to the survey, there are thirty four (34) certification bodies offering certification for conformity assessment (i.e. QMS, EMS, Product Certification, Food Safety Systems, etc.), about twenty (20) certification bodies reported to be offering certification program relating to food safety systems (such as GMP, HACCP, etc). Most of these certification bodies are privately owned, only two (2) bodies are government-based. Accreditation process are also made through international accreditation bodies such as UKAS, RVA, JAS-ANZ, JAB, etc.

Table A-1-1. Current accreditation bodies for production system in Thailand

Accreditation Body	Scope of Accreditation	International Recognition
The National Accreditation Council of Thailand (NAC), Ministry of Industry	Hazard Analysis Critical Control Point (HACCP), Quality Management System (QMS: ISO9000), Environmental Management System (EMS: ISO14000)	International Accreditation Forum (IAF)
The Office of Commodity and System Standards Accreditation (CSSA), The National Bureau of Agricultural Commodity and Food Standards (ACFS), Ministry of Agriculture and Cooperatives (MOAC)	Good Agricultural Practice (GAP), Hazard Analysis Critical Control Point (HACCP), Good Manufacturing Practice (GMP) and Organic Production	On process

The certification schemes offered by these accreditation bodies cover GAP (Good Agricultural Practice), GMP (Good Manufacturing Practice), HACCP (Hazard Analysis Critical Control Point) and Organic production. Government body in each sector having its own authority and mandate to take control of food industry according to their regulatory functions - The Department of Agriculture (DOA) for fruit & vegetables, the Department of Fisheries (DOF) for fishery products and the Department of Livestock Development (DLD)

for livestock products. At present, both government authority and private (foreign) certification bodies undertake the certification activities for agricultural commodities and food products.

Problems / Constraints

The recent survey report indicates that the number of food factories in Thailand is 9,439 companies (Large 294, Medium 497 and Small 8,648; Source: National Food Institute, Thailand, 2002), of which GMP/HACCP certified food companies, mostly of large and medium size, are approximately 450 (less than 5 % to the total). More than 95 % of the food companies in Thailand are reported to be unable to meet the requirement for GMP/HACCP, mainly due to limited capability and competency in the accreditation process, in addition to less competency of the company per se.

As for GAP, the government has issued a national policy, announcing implementation of the program with the target to be gone through by the year 2005. The target for each sector has been set at (1) DOA: 325,000 farms/orchards of fruit & vegetables (covering 27 kinds of plant products), (2) DOF: 30,000 fisheries farms and (3) DLD: 85,500 livestock farms.

To achieve this target, not only CSSA as a national accreditation body but also each department (DOA, DOF and DLD) and private certification bodies will have to expedite the development of their service capability and capacity.

Field survey by the study team indicates that the key problems & constraints relating to accreditation/ certification system are summarized as follows;

- 1) The ACFS has just started its accreditation activity for HACCP in 2004. Therefore, certification processes of HACCP undertaken by both private and government certification bodies are not well standardized yet.
- 2) International recognition for certification bodies who providing HACCP certification not achieved.
- 3) Difference in the interpretation of the requirements among certification service providers. This leads to multi-certification required by different certifying agents due to customer's confidence problems.
- 4) Insufficient human resources & competent staffs in both government and private certification bodies.
- 5) No protocol clearly set out for criteria for assessors in qualification and assessment processes for GAP, GMP and HACCP; each certification body having their own in-house procedures.
- 6) Price war for certification program is still an issue in the market place, many

companies choosing certification body based on price - not based on quality and integrity.

To overcome these problems, CSSA must expedite the development of its internationally recognized accreditation system. However, the current status of CSSA's human resources (skills and numbers) in each section is insufficient (Livestock 8 staffs, Plant 8 staffs, Fisheries 5 staffs, Laboratory 6 staffs and General Administration 6 staffs). Development of its human resources is in urgent need, in order for CSSA to provide full support for food safety system accreditation and certification processes. Sharing knowledge and experience of Japan in this area under Japan's Technical Cooperation will greatly contribute to upgrading of the production system (GAP/GMP/GHP/HACCP/Organic) and facilitating the food trade procedure.

7. Overall Goal

Accreditation capacity of ACFS (CSSA) on production system certification is internationally recognized, and eventually the production system (GAP/ GMP/ HACCP/ Organic) is upgraded and the external food trade procedure is facilitated.

8. Project Purpose

Accreditation capacity of ACFS (CSSA) on production system certification (GAP/ GMP/ HACCP/ Organic) is strengthened.

9. Outputs

- a. Human resources required for accreditation activity are developed and secured in ACFS.
- b. System to disseminate relevant information on the accreditation capacity of ACFS is established.

10. Activities

- a-1. To conduct the baseline study to find, analyze and evaluate the present situation (problems/needs) in depth (2 months including a-2/a-3)
- a-2. To identify the areas to be strengthened
- a-3. To review the existing guidelines /standards for accreditation
- a-4. To develop a group training program to be conducted in Thailand and Japan, for accreditation system/ standards/ guidelines. (Based on the result of a-1/a-2/a-3)
- a-5. To select trainees and arrange training organizations, places, facility, equipment and trainers
- a-6. To develop and produce training materials
- a-7. To implement the group training in Thailand and Japan
- a-8. To conduct a trial-run program
- b-1. To publicize relevant information through various media (ACFS web site, etc.)

- b-2. To establish a mechanism to exchange information among organizations/ personnel concerned
- c-1. To conduct monitoring/evaluation study as per schedule and based on Logframe Matrix Structure (Complete form), and feedback for modification as required
- * The Logframe, the Monitoring Schedule and the Project Activity Schedule (Detail) are to be prepared before the project commences.
- * The Monitoring of the project will be conducted by the project member(s), while the Evaluation of the project will be made by an external task force.

11. Inputs

A. Input from the Recipient Government;

- 1) Assignment of Counterpart Staffs;
 - One (1) Project Manager
 - One (1) Assistant Project Manager
 - Two (2) Full time Supporting Staffs
 - Ten (10) Project Team from CSSA
 - Two (2) Clerks/Assistants from CSSA
- 2) Group Training Programs in Thailand
 - Accreditation Management Processes
 - Five (5) days/course, three (3) courses, thirty (30) persons/course
 - Lead Auditor Course for each scheme (GAP & Organic, GMP & HACCP)
 - Five (5) days/scheme, 30 courses, 40 persons/course
- 4) Project office
- 5) Buildings and facilities required for the project
- 6) Local expenses related with the counterpart staffs
- 7) Local cost required for implementation of the project

B. Input from the Japanese Government

- 1) Dispatch of long-term experts
 - One (1) Accreditation Process Management
 - Project Supervision / Trial-Run Program / Group Training
- 2) Dispatch of short-term experts
 - For Group Training and Trial-Run Program
 - One (1) GAP / Organic
 - One (1) GMP / HACCP
 - One (1) Baseline Study / Project Monitoring
- 3) Group Training Programs in Japan
 - On the Job Training for ten (10) CSSA's key staffs for each year

General Administration
Field Assessment & Audits
Reporting System

4) Expenses necessary for the above

12. Expected Benefits

Benefit:

By implementing the project, the following benefit can be expected:

Accreditation capacity of ACFS on production system certification is strengthened and internationally recognized.

Eventually, the production system (GAP/GMP/HACCP) is upgraded, and the external food trade procedure is facilitated.

Beneficiaries:

Beneficiaries to whom positive changes are intended directly by implementing the project will be:

- 1) Food production system certification bodies, and
- 2) Food exporters and importers in Thailand and other food trade partner countries.

In addition, the benefit will also be extended indirectly to the primary/secondary producers, and consumers in Thailand and other food trade partner countries.

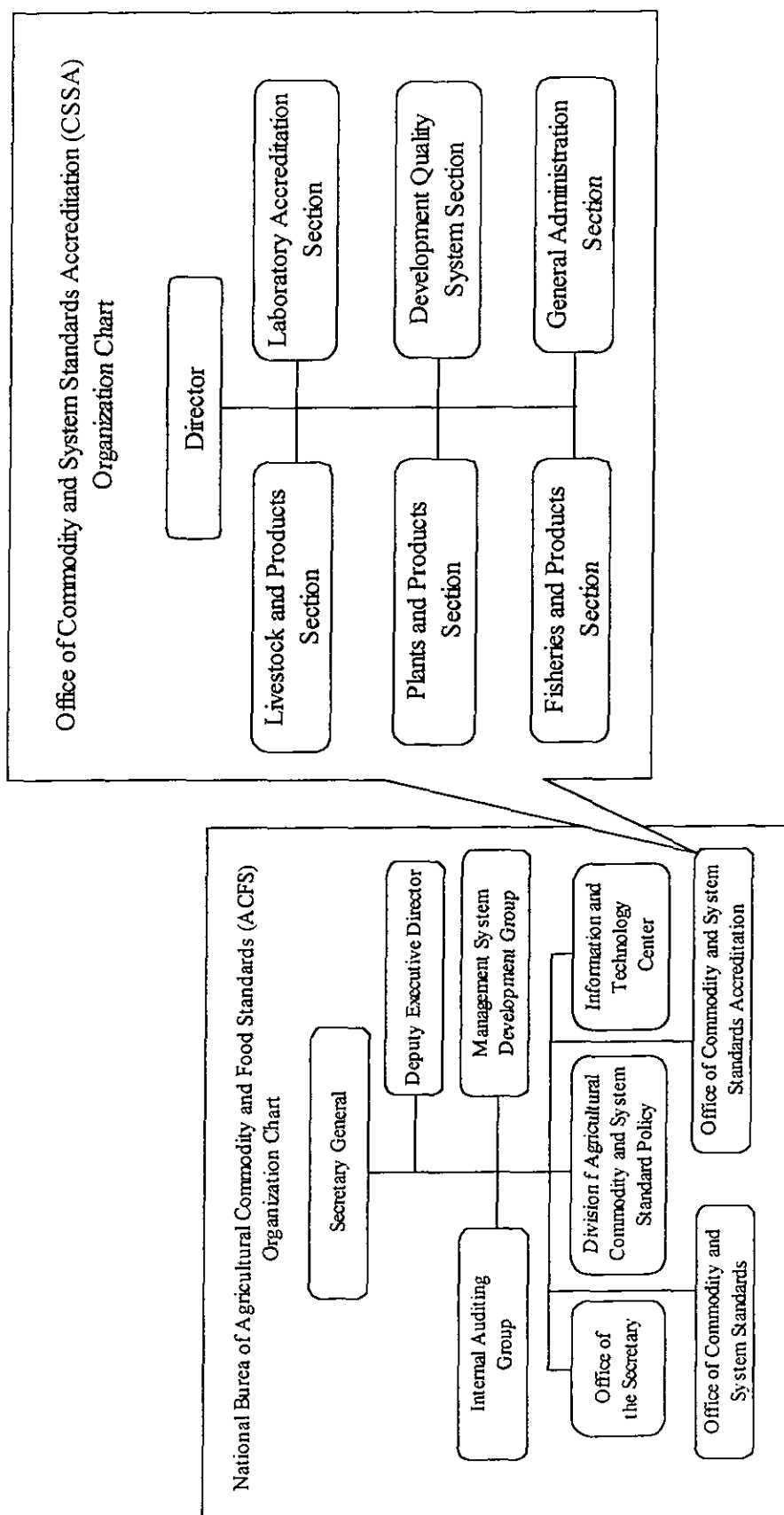


Fig. A-1-1 Organization Chart of CSSA / ACFS (MOAC)

Appendix A-1-2

Current Status of Accreditation System in Thailand

August 2004

Scope of Accreditation		Accreditation Body (Thai)	Remarks
Quality Management System (ISO9001)		NAC	
GAP		ACFS	
Organic Farming		ACFS	
GMP		ACFS	
HACCP	*	NAC	
	*	ACFS	
Environmental Management System (ISO14001)		NAC	
Testing Laboratory	Food / Medical / Health	BLQS	ACFS to recognize labs accredited by BLQS
	Other than Food / Medical / Health	* TLAS	
		* BLA	
Calibration Body		TLAS	
Inspection Body	*	NAC	
	*	(ACFS)	
Training Program	*	TISI	
	*	(ACFS)	
Auditor Registration	*	TISI	
	*	(ACFS)	
Products	*	(NAC)	
	*	(ACFS)	

NAC < TISI < MOI, TLAS < TISI < MOI, BLQS < DMSC < MOPH

BLA < DSS < MOSTE, ACFS (CSSA) < MOAC, TISI < MOI

() : Start operation soon, or have a future plan for operation

* : Scope-sharing not made yet

Summary of Candidate Project (Project Code: A-2)

1. Name of Candidate Project

Strengthening the Accreditation Capacity on Training Program for Food Safety

2. Implementing Agency

Office of Commodity and System Standards Accreditation (CSSA),
National Bureau of Agricultural Commodity and Food Standards (ACFS),
Ministry of Agriculture and Cooperatives (MOAC)

3. Type of Scheme

Technical Cooperation Project

4. Project Area

Bangkok

5. Project Period

3 years

6. Rationale

ACFS CSSA / Accreditation Body on Training Program

In response to the internal and external concerns on the food safety issues, the National Bureau of Agricultural Commodity and Food Standards (ACFS) was established under the Ministry of Agriculture and Cooperatives (MOAC) in October 2002, according to the approval of cabinet in March 2002, in the process of the governmental restructuring. The ACFS is acting as a national single body responsible for all issues relating to agricultural and food products for export. In November 2003, the cabinet approved that ACFS acts as a national accreditation body for all export agricultural commodities/food and some import foods.

The Office of Commodity and System Standards Accreditation (CSSA), a division under ACFS, is an accreditation body providing accreditation process to facilitate export of agricultural and food products. Certification schemes to be covered by CSSA for accreditation are production system, testing laboratories, inspection bodies, training program, auditor registration and products, including the future plan. CSSA provides accreditation network and links to international recognition program.

This project focuses on strengthening the accreditation capacity on training program for food safety. The CSSA has a plan to start its accreditation activity for this scheme as soon as its human resources (skills and number) have been made qualified and available enough.

The CSSA, by its functional structure, is well positioned in providing the accreditation process for food safety training program such as Organic Production, GAP (Good Agricultural Practice), GMP (Good Manufacturing Practice) and HACCP (Hazard Analysis Critical Control Point). The accreditation system of training course (course materials/ curriculums and tutors) will provide the agri-food industry with more effective and standardized training program on food safety.

Present Situation of Food Safety Training Systems

Since the past few years, the government has continuously approved funds and launched many projects relating to food safety for food industry. The projects were delivered through various government organization and institutions such as National Food Institute (NFI), Thailand Productivity Institute (TPFI), Department of Industrial Promotion, universities, etc. The objective is to improve food production standard and to boost food export. Field implementation of the projects at the factory level are handled by technical consultants and consultancy companies. Food safety training program is a crucial process for the development and implementation of food safety systems.

At present, many medium and large food companies have already implemented quality system/ food safety management program i.e. ISO9000, GMP, HACCP, BRC, etc. According to the QMS requirements, the companies are required to define training needs, implement food safety training program and ensure the program conducted effectively. Some medium and large companies have their own in-house training competency and facilities, while others do not have competent staffs for this purpose.

In Thailand, the company can either use their internal resources or seek assistance from various external sources for training service such as;

- Government support from each department (DOA, DOF & DLD)
- Certification bodies (both government and private organizations)
- Consultancy companies (approx. 120 consultancy companies currently offering training services relating to food)
- Institutions i.e. National Food Institute, Thailand Productivity Institute, etc.
- Universities (university lecturers)
- Government officers (at their private times)
- Freelance consultants and tutors.

It is likely that the company prefers to use training service from certification bodies, university lecturers and consultancy companies, as they are perceived as “competent most” comparing to the other sources.

Problems / Constrains

There are no accreditation systems for food safety training available in Thailand. Criteria

& standard of training program components i.e. training materials, exercise/workshops, qualification of tutors are not clearly established as each training service provider/ tutor develops their own training materials. At present, food safety training in Thailand is not harmonized yet among food safety training program providers (government bodies, university tutors, institutions, private certification bodies, consultancy companies and individual consultants).

A lot of efforts have been made to have the program standardized by some government bodies, but no concrete plan has ever been put in place since no accreditation network for training on food safety exists in Thailand so far. According to the field survey made by the study team, the comments/ feedback from food industry, consultancy companies, and certification bodies clearly indicate that training program for food safety is usually ineffective. As a result, this leads to slow process of food safety system certification. The key problems and constraints in regard to food safety training can be summarized as follows;

- 1) No accreditation body providing accreditation systems on training program and trainer registration.
- 2) Guidelines & criteria for training program not available.
 - Qualification of tutors (qualification/ experiences)
 - Standard training material & supporting documents (such as GAP, GHP, GMP, HACCP and Organic)
- 3) Lack of human resources (capacity & competency).
- 4) No harmonization system among training service providers.
- 5) Each training service provider & tutor develop his/ her own in-house training materials, usually based on his/her experiences.
- 6) Currently there is no recognition systems for food safety training, so that, no mechanism of maintaining the integrity of the program.
- 7) Ineffective evaluation system for training program.

The recent survey report indicates that the number of food factories in Thailand is 9,439 companies (Large 294, Medium 497 and Small 8,648; Source: National Food Institute, Thailand, 2002), of which GMP/HACCP certified food companies, mostly of large and medium size, are approximately 450 (less than 5 % to the total). More than 95 % of the food companies in Thailand are reported to be unable to meet the requirement for GMP/HACCP. As for GAP, the government has issued a national policy, announcing implementation of the program with the target to be gone through by the year 2005. The target for each sector has been set at (1) DOA: 325,000 farms/orchards of fruit & vegetables (covering 27 kinds of plant products), (2) DOF: 30,000 fisheries farms and (3) DLD: 85,500 livestock farms. The above objectives can only be achieved when training skills and capacity of human resources have been made available enough. The CSSA, as a

national accreditation body, is well positioned to facilitate these programs by developing an accreditation network for training on food safety through potential training program providers such as government bodies (e.g. DOA, DOF and DLD), private certification bodies (35), universities (30), institutions (6) and consultancy companies (85).

However, the current status of CSSA's human resources (skills and numbers) is insufficient (Livestock 8 staffs, Plant 8 staffs, Fisheries 5 staffs, Laboratory 6 staffs and General Administration 6 staffs). Development of its human resources is in urgent need, in order for CSSA to provide full support for strengthening the food safety system. Sharing knowledge and experience of Japan in this area under Japan's Technical Cooperation will greatly contribute to disseminating effective, standardized training program and ensuring food safety in Thailand.

7. Overall Goal

Effective and standardized training program for food safety is disseminated, and eventually the food safety is ensured.

8. Project Purpose

Accreditation capacity of ACFS (CSSA) on training program for food safety is strengthened.

9. Outputs

- a. Human resources required for accreditation activity are developed and secured in ACFS (CSSA)
- b. System to disseminate relevant information on the accreditation capacity of ACFS is established.

10. Activities

- a-1. To conduct the baseline study to find, analyze and evaluate the present situation (problems/needs) in depth (2 months including a-2)
- a-2. To identify the areas to be strengthened
- a-3. To develop a group training program to be conducted in Thailand, for accreditation system/ standards/ guidelines. (Based on the result of a-1/a-2)
- a-4. To select trainees and arrange training organizations, places, facility, equipment and trainers
- a-5. To develop and produce training materials, supporting documents and guidelines
- a-6. To implement the group training in Thailand (11 months in total in Thailand)
- b-1. To publicize relevant information through various media (ACFS web site, etc.)
- b-2. To establish a mechanism to exchange information among organizations/ personnel concerned

c-1. To conduct monitoring/evaluation study as per schedule and based on Logframe Matrix Structure (Complete form), and feedback for modification as required

* The Logframe, the Monitoring Schedule and the Project Activity Schedule (Detail) are to be prepared before the project commences.

* The Monitoring of the project will be conducted by the project member(s), while the Evaluation of the project will be made by an external task force.

11. Inputs

(1) Input from the Recipient Government;

1) Assignment of Counterpart Staffs

One (1) Project Manager

One (1) Assistant Project Manager

Two (2) Full time Supporting Staffs

Ten (10) Project Team from CSSA

Two (2) Clerks/Assistants from CSSA

2) Group Training Programs in Thailand

Accreditation Management Processes

Five (5) days/course, three (3) courses, thirty (30) persons/course

Train the Trainer Course for each scheme (GAP, Organic, GMP & HACCP / For CSSA's Staffs and all other concerned parties)

Five (5) days/scheme, three (3) courses/scheme, thirty (30) persons/course

3) Project office with necessary equipment

4) Buildings and facilities required for the project

5) Local expenses related with the counterpart staffs

6) Local cost required for implementation of the project

(2) Input from the Japanese Government

1) Dispatch of long-term expert

One (1) Expert -Accreditation Process Management

Project Supervision / Group Training

2) Dispatch of short-term experts

One (1) Expert - GAP / Organic, Group Training

One (1) Expert - GMP / HACCP, Group Training

One (1) Expert - Baseline Study / Project Monitoring

3) Expenses necessary for the above

12. Expected Benefits

Benefit

By implementing the project, the following benefit can be expected:

Accreditation capacity of ACFS (CSSA) on training program for food safety is

strengthened.

Eventually, effective and standardized training program for food safety is disseminated and the food safety is ensured.

Beneficiaries

Beneficiaries to whom positive changes are intended directly by implementing the project will be:

- 1) Food safety related tutors, auditors, facilitators, consultants, inspectors, etc., and
- 2) Primary/ secondary producers/ Processors/ Collectors

In addition, the benefit will also be extended indirectly to food exporters / importers, and consumers in Thailand and other food trade partner countries.

Summary of Candidate Project (Project Code: A-3)

1. Name of Candidate Project

Strengthening the Accreditation Capacity on Food Laboratories

2. Implementing Agency

Office of Commodity and System Standards Accreditation (CSSA),

National Bureau of Agricultural Commodity and Food Standards (ACFS),

Ministry of Agriculture and Cooperatives (MOAC)

3. Type of Scheme

Technical Cooperation Project

4. Project Area

Bangkok

5. Project Period

3 years

6. Rationale

ACFS/ CSSA

In response to the internal and external concerns on the food safety issues, the National Bureau of Agricultural Commodity and Food Standards (ACFS) was established under the Ministry of Agriculture and Cooperatives (MOAC) in October 2002, according to the approval of cabinet in March 2002, in the process of the governmental restructuring. The ACFS is acting as a national single body responsible for all issues relating to agricultural and food products for export. In November 2003, the cabinet approved that ACFS acts as a national accreditation body for all export agricultural commodities/food and some import foods.

The Office of Commodity and System Standards Accreditation (CSSA), a division under ACFS, is an accreditation body providing accreditation process to facilitate export of agricultural and food products. Certification schemes to be covered by CSSA for accreditation are production system, testing laboratories, inspection bodies, training program, auditor registration and products, including the future plan.

This project focuses on strengthening the accreditation capacity on food testing laboratories. The CSSA will start its accreditation activity for this scheme as soon as its human resources (skills and number) have been made available enough. CSSA has a key responsibility in establishing the accreditation network for laboratory analysis of agricultural commodity and food products. This will provide a mechanism for the improvement of food laboratory

analysis capacity and competency in line with accreditation of production system for food sector in Thailand.

Current Laboratory System in Thailand

Laboratory analysis of food product (microbiological, chemical and physical parameters) provides mechanism for verification of the current company's food safety management system being effectively assured. Every food establishments have responsibility to prove that they have an appropriate system and be able to demonstrate that all reasonable precaution have been put in place to protect consumers from health adverse effects. Most of food companies in Thailand (medium and large size in terms of number of staffs and capital investment) are equipped with their own in-house laboratory testing capability in order to support the control of operation.

Currently, there are four (4) types of laboratories providing food testing and analysis services:

- 1) Government laboratories;
 - a. Laboratory under the MOAC: 31 laboratories (DOA: 11 laboratories, DOF 11 laboratories and DLD: 9 laboratories)
 - b. Laboratory under the MOPH: 1,317 laboratories
- 2) Semi-government laboratories (University and Institutions): 32 laboratories
- 3) Independent private/ central laboratories: 45 laboratories
- 4) Food factories' In-House laboratories: 1,490 laboratories

Present Status of Laboratory Accreditation System

Accreditation system for laboratory analysis of food products helps reduce risk for food production. It provides for assuring system that accredited laboratories are competent to carry out the work they undertake. For suppliers, it builds up consumers' confidence in its products or services and builds up market confidence in its consistent capability with regard to the manufacture or delivery of products or services as agreed, and be accepted by international laboratory accreditation members (APLAC and ILAC mutual recognition).

In Thailand, it is reported that there are currently four (4) accreditation bodies providing laboratory accreditation services for food and food related products;

- 1) Bureau of Laboratory Quality Standard (BLQS), Department of Medical Science, Ministry of Public Health.
- 2) Thailand Laboratory Accreditation Scheme (TLAS), Thailand Industrial Standardization Institute (TISI), Ministry of Industry.
- 3) Bureau of Laboratory Accreditation (BLA), Department of Science Services, Ministry of Science and Technology.
- 4) The Office of Commodity and System Standards Accreditation (CSSA), The National

Bureau of Agricultural Commodity and Food Standards (ACFS), Ministry of Agriculture and Cooperatives.

In the past, accreditation system for food laboratory analysis conducted by both TLAS and BLQS, but now this activity mainly handled by BLQS, while TLAS providing accreditation system for the products other than food and medical products. All those food laboratories that have been accredited to ISO/IEC 17025 by TLAS are regarded as accredited under the BLQS according to their memorandum of understanding (MOU) made between the Ministry of Public Health (MOPH) and Ministry of Industry (MOI). BLQS has accredited 45 laboratories to ISO/IEC 17025 (5 central/ independent laboratories and 40 in-house laboratories). However, the BLA and ACFS are the new comer that entering into this area. It is likely that the scope of accreditation of BLA is similar to that of TLAS's. ACFS is not going to provide a direct accreditation service for food laboratory, but it will provide for recognition and registration of laboratory testing competency that have been accredited to ISO/IEC 17025 by BLQS and other internationally recognized bodies.

Table A-3-1. Existing accreditation bodies for food laboratory in Thailand

Accreditation Body	Scope of Accreditation	International Recognition
Bureau of Laboratory Quality Standard (BLQS), Department of Medical Science, Ministry of Public Health	Food, Pharmaceuticals, Cosmetics, Biological, Medical and health products	APLAC and ILAC
Thailand Laboratory Accreditation Scheme (TLAS), Thailand Industrial Standardization Institute, Ministry of Industry	Other than food and medical products	APLAC and ILAC
Bureau of Laboratory Accreditation (BLA), Department of Science Services, Ministry of Science and Technology	Sugar and sugar products, Animal feeds, Food packaging and other related products	On process
* The Office of Commodity and System Standards Accreditation (CSSA), The National Bureau of Agricultural Commodity and Food Standards (ACFS), Ministry of Agriculture and Cooperatives.	Agricultural commodities and food products	Said to be on process

*Remark: * CSSA will not provide accreditation services, but CSSA will recognize and register those laboratories who have been accredited to ISO/IEC 17025 by internationally recognized accreditation body i.e. BLQS.*

Problems / Constrains

Nowadays, food companies more and more necessitate competent laboratories that are reliable in test results and recognized by customers. This leads to a substantial demand for food testing in order to ensure that product specifications are met. Customers, importers and retailers are more and more asking companies to demonstrate their laboratory competency (whether it is generated by in-house or external laboratory) to verify that food safety system being well managed. Many importers require their suppliers implementing laboratory accreditation system as they can be assured that accreditation of laboratories provides confidence on certification they need. At present in Thailand, however, accreditation of laboratory is still limited due to lack of human resources (both competency and capacity). Currently, only a small number of government and private labs achieved international accreditation to ISO/IEC 17025 while the majority is still not ready yet.

According to the field survey (site visit, interview and answering questionnaire), the key problems & constraints can be summarized as follows;

- 1) Limitation of human resource in both number of staffs and technical competency;
 - Accreditation body: Due to limitation of qualified assessors, the companies have to be in a very long waiting list.
 - The companies: Lack of technical & qualified person to develop and implement a laboratory accreditation program.
- 2) Limitation of capital investment, purchasing of new equipment & improving facilities may not be affordable.
- 3) Emphasis not made to a basic research on primary analysis method i.e. Gravimetric, Volumetric and Isotope dilution as it is considered as backbone of food testing.
- 4) Training program and support from government on testing methods is very limited.
- 5) Use of the international recognition system usually not made fair-treatment by respective government authority in the food industry's point of view; Private laboratories are required to have ISO/IEC 17025 accredited while government laboratories are not.
- 6) Privatization for food laboratory analysis not functioning although the government has announced this policy but no real activities undertaken by the officers at operational levels. It provides "no incentive situation" for private/ independent laboratory service providers.
- 7) Many accreditation bodies offer the same services, this can lead to confusion by the industry - no "role sharing" and not "in well cooperation" environment.
- 8) Existing accreditation bodies also offer laboratory analysis services, this is seen by food

industry and central/ independent laboratories as “a conflict of interest” situation.

- 9) Certified reference standard for laboratory is very expensive, most of laboratory cannot afford to buy.
- 10) Proficiency tests activities (national and international level) are very limited and expensive.
- 11) Limitation in the number of approved calibration laboratories, this leads to a slow process of accreditation approval.
- 12) Based on current government export procedure, it is no incentive for being an accredited laboratory.

In order to achieve the National Policy for Food Safety (Promotion of GAP, GMP & HACCP System / “Kitchen of the World Program”), the strengthening of testing capability for both government and private laboratories in Thailand is indispensable. However, the current status of CSSA’s human resources (skills and numbers) is insufficient (Only 6 staffs for Laboratory Section). Human resources development is in urgent need, in order for CSSA to provide full support for strengthening the food safety system. Sharing knowledge and experience of Japan in this area under Japan’s Technical Cooperation will greatly contribute to enhancing the food laboratories certification capability up to international recognition level and facilitating the food trade procedure.

7. Overall Goal

Accreditation capacity of ACFS (CSSA) on food laboratories is internationally recognized, and eventually the laboratories certification capacity is enhanced and the external food trade procedure is facilitated.

8. Project Purpose

Accreditation capacity of ACFS (CSSA) on food laboratories is strengthened.

9. Outputs

- a. Human resources required for accreditation activity are developed and secured in ACFS (CSSA)
- b. System to disseminate relevant information on the accreditation capacity of ACFS (CSSA) is established.

10. Activities

- a-1. To conduct the baseline study to find, analyze and evaluate the present situation (problems/needs) in depth (2 months including a-2/a-3))
- a-2. To identify the areas to be strengthened

- a-3. To review the existing guidelines /standards for accreditation
 - a-4. To develop a group training program to be conducted in Thailand and Japan, for accreditation system/ standards/ guidelines. (Based on the result of a-1/a-2/a-3)
 - a-5. To select trainees and arrange training organizations, places, facility, equipment and trainers
 - a-6. To develop and produce training materials
 - a-7. To implement the group training in Thailand and Japan
 - a-8. To conduct a trial-run program

 - b-1. To publicize relevant information through various media (ACFS web site, etc.)
 - b-2. To establish a mechanism to exchange information among organizations/ personnel concerned

 - c-1. To conduct monitoring/evaluation study as per schedule and based on Logframe Matrix Structure (Complete form), and feedback for modification as required
- * The Logframe, the Monitoring Schedule and the Project Activity Schedule (Detail) are to be prepared before the project commences.
- * The Monitoring of the project will be conducted by the project member(s), while the Evaluation of the project will be made by an external task force.

11. Inputs

(1) Input from the Recipient Government

- 1) Assignment of Counterpart Staffs
 - One (1) Project Manager
 - One (1) Assistant Project Manager
 - Two (2) Full time Supporting Staffs
 - Ten (10) Project Team from CSSA
 - Two (2) Clerks/Assistants from CSSA
- 2) Group Training Programs in Thailand
 - Lab Accreditation Management
 - Five (5) days/course, Three (3) courses, Thirty (30) persons/course
 - Lab Accreditation Standards
 - Five (5) days/scheme, Three (3) courses, Thirty (30) persons/course
 - Lab Accreditation Internal Audits
 - Three (3) days/course, Three (3) courses, Thirty (30) persons/course
 - Presentation Skills
 - Five (5) days/scheme, Three (3) courses, Thirty (30) persons/course
- 3) Project office
- 4) Buildings and facilities required for the project
- 5) Local expenses related with the counterpart staffs

6) Local cost required for implementation of the project

(2) Input from the Japanese Government

1) Dispatch of long-term expert

One (1) Laboratory Accreditation and Management
Project Supervision / Trial-Run Program / Group Training

2) Dispatch of short-term experts

One (1) Lab Accreditation Standards, Trial-Run Program, Group Training
One (1) Lab Accreditation Internal Audits, Trial-Run Program, Group Training
One (1) Baseline Study / Project Monitoring

3) Group Training Programs in Japan

On the Job Training for ten (10) CSSA's key staffs
General Administration
Managing Proficiency Test
Field Assessment & Audits
Reporting System

4) Provision of equipment

5) Expenses necessary for the above

12. Expected Benefits

Benefit

By implementing the project, the following benefit can be expected:

Accreditation capacity of ACFS on food laboratories is strengthened and internationally recognized.

Eventually, the laboratories certification capacity is enhanced, and the external food trade procedure is facilitated.

Beneficiaries

Beneficiaries to whom positive changes are intended directly by implementing the project will be:

- 1) Food laboratories, and
- 2) Food exporters and importers in Thailand and other food trade partner countries.

In addition, the benefit will also be extended indirectly to the primary/secondary producers, and consumers in Thailand and other food trade partner countries.

