Consultation for the development of quality infrastructure with emphasis on agricultural products, Phase II (August 2553-2555)
Metrology Society of Thailand (MST) and Physikalisch-Technische Bundesanstalt (PTB)

Background

Thailand's economy faces tough regional competition, both with regard to labour cost and product quality. In order to improve product quality and thus the competitiveness of Thai enterprises, an efficient, regionally and internationally integrated quality infrastructure is a necessary prerequisite.

Compliance with the increased quality requirements for products and services on the international markets and meeting obligations arising from global and regional trade agreements is indispensable.

The necessary components of the quality infrastructure (standardisation, metrology, testing and accreditation and certification) are largely available in Thailand. However, some QI issues are yet to be resolved, such as analysis for certain pesticide residues. As a result, particularly small and medium-sized enterprises (SMEs) are faced with difficulties and expenses when exporting fruits and vegetables abroad.

Objective

Overall the ability of Thai national quality infrastructure institutions is to be supported in addressing issues of agro-industrial nature. Thus ensuring that services for enterprises in the agricultural sector become more efficient.

Project Description

As part of an integral component of the German-Thai programme "Strengthening of the competitiveness and eco-efficiency of SMEs", this project, jointly coordinated by the Metrology Society of Thailand (MST) and the Physikalisch-Technische Bundesanstalt (PTB), aims to consolidate the Quality Infrastructure (QI) of Thailand as an interlinked and nationally coordinated system and offer efficient services which comply with international specifications for the selected value-creation chains in agro-industry. This second phase will review and prioritize the kinds and number of pesticide residues found in the crop samples sent to EU. The analytical methods in line with the European Community Reference Laboratory as well as sampling method under the metrological techniques will be developed, together with reference pesticide samples and collaborative study among the project members and the European Community Reference Laboratory. There will be exchange of scientist's experiences between the EU laboratories and project members via the workshop related to the pesticide residue study under Asian Pesticide Residue Workshop.

Problem to be addressed:

Thailand has been one of the countries repeatedly notified by EU countries for having exceeded the maximum residue levels of pesticide residue in either fruits, vegetables or herbs. In the harmonized control of high-risk products, Regulation 669/2009/EU, three items from Thailand, yard long beans, aubergines, and brassica vegetables are on the control list and obliged to 50% check. Though the strict control of EU regulation 669/2009 reduces the percentage of exceeding maximum residue levels of products from Thailand reported in 2010, Thailand still needs to work on many areas under the QI. The areas comprise Good Agricultural Practice (GAP), Good Manufacturing Practice (GMP) and Good Laboratory Practice (GLP) according to ISO/IEC 17025 including PT scheme according to ISO/IEC 17043 and Reference Material Producer Scheme according to ISO Guide 34.

The main constraints are inadequate knowledge of industries on QI, high distribution of responsibilities under the QI system among the concerned government organizations, high compliance cost, partial recognition internationally and regional competition. Whereas the main opportunities are the new Standardization Act of 2008 which will facilitate improvements of QI, global pressure is on strong and coherent QI, well established EU market, and MST's position in promoting awareness on the importance of QI.

A large numbers of EU regulations on food and feed safety have been implemented following the Mad Cow Disease (MSD) incident during 1987-1997. At the same time the review of pesticide regulation have been initiated passing through Council Directive 91/414/EEC, and harmonizes the regulation of plant protection products in the European Community (EC). Based on the main regulation, Reg. (EC) no. 396/2005, hundreds of pesticide residues have been set since 2005. Commodity groups of products are also officially classified (Reg. EU 600/2010). Most of the generic pesticides used in the tropical area become cancel use in EU, forcing related Maximum Residue Limits (MRLs) to set at the Limit of Detection (LOD). This incident prompted the export countries to strengthen themselves to comply with these regulations. Thus, the overall concerned processes of QI must be consolidated and tested for their efficiency, transparency, and traceability through the production chain such as GAP, GMP/HACCP and also laboratory capability to meet the MSTQ.

The second phase of this project will strengthen the pesticide residue analysis capability using strategic metrology to comply with the new regulations and also act as a safeguarding device for export country.

Components of Support

Component 1
Improving testing capabilities of accredited Thai testing laboratories. The project will collaborate closely with testing laboratories for pesticide analysis and the implementing partner to provide specialized training and consultation.

Component 2
Activities aimed at improving the framework conditions for a QI-system are coordinated with the Thai Industrial Standards Institute (TISI), the secretariat of the National Standard Council.
Mediators in this project are decision-makers in ministries who assume tasks in the field of "quality infrastructure", organizations of the corporate economy and of civil society, as well as scientific-technical associations.

Cooperation

The project is part of the German-Thai programme “Enhancing the competitiveness and eco-efficiency of SMEs“ coordinated by GIZ (German International Cooperation). It is implemented in collaboration with the other German implementing organisations and international donors.

Project Data

Consultation for the development of quality infrastructure with special emphasis on

agriculture products

Source of finance
Federal Ministry for Economic Cooperation and Development, Germany

Commission value
1,100,000 EUR thereof 400.000 EUR for the current phase

Implementing agency
Physikalisch-Technische Bundesanstalt (PTB)
National Metrology Institute, Germany

Term
From 05/2006 – 10/2012
Current Phase from 10/2010 – 10/2012

Planned activities under the Project:

1) Consolidation of the list of stake holders relevant to this activity
2) Hiring an assistant project coordinator
3) Scientific meeting/Training on pesticide residue analysis
    A. Sampling procedure for analysis of pesticide in fruit and vegetable
    B. Methodology for analysis of pesticide in fruit and vegetable: Liquid and gas chromatography mass spectrometry based technique
    C. Validation of analytical method for analysis of pesticide in fruit and vegetable
    D. Estimation of measurement uncertainty for analysis of pesticide in fruit and vegetable
    E. Sample preparation for PT sample at low level of pesticide content
4) Organising a Proficiency Testing (PT) Scheme on the analysis of pesticide in vegetable for Thai testing laboratory

    Measurands:

    1) omethoate
    2) dimethoate
    3) EPN
    4) dicrotophos
    5) chlorpyriphos
    6) ethion
    7) prophenophos
    8) triazophos
    9) acephate
    10) profenofos

    Concentration range: Approximately 20 ppb

    Matrix: Yard long beans

    Participants:

1) Central Lab (Bangkok): Central Laboratory (Thailand) Co., ltd. (Bangkok)

2) Chatchawaan import export and packaging co., ltd.
3) SGS: SGS (Thailand) Co.,ltd.
4) NFI: national Food Institute
5) DOA: Department of Agricultural, Misnistry of agriculcural
6) OMIC: Overseas Merchandise Inspection Co., ltd.
7) AMARC: Asia Medical and Agricultural Laboratory and ResearchCenter

8) Central Lab (Chachoengsao): Central Laboratory (Thailand) Co., ltd. (Chachoengsao)
9) Central Lab (Chiangmai): Central Laboratory (Thailand) Co., ltd. (Chiangmai)
10) Central Lab (Khonkaen): Central Laboratory (Thailand) Co., ltd. (Khonkaen)
11) Central Lab (Samut sakorn): Central Laboratory (Thailand) Co., ltd. (Samut sakorn)
12) Central Lab (Songkhla): Central Laboratory (Thailand) Co., ltd. (Songkhla)

13) DMSc (Bangkok): Department of medical science, Ministry of public health
14) DMSc (Trang): Department of medical science, Ministry of public health, Trang
15) TISTR: Thailand Institute of Scientific and Technological Research

5) Developing reference material for used in Thai pesticide testing laboratories
   A. Candidate material left from PT sample will be study the long term stability and used as RM
6) Creating the linkage between Thai pesticide testing laboratories and the EU community reference laboratories
   A. Thai pesticide testing laboratories will participate in the PT schemes available for EU community reference laboratories
7) Exchange of scientists between Europe and member partners
8) Strengthening the inspection activities in the food certification in Thailand
   A. Scientific meeting/Training on inspection of fruit and vegetable for pesticide residue analysis
9) Organising Asian Pesticide Residues Analysis Workshop
10) Member of MST participation in the symposium
    "The future of reference material-science and innovation"
11) Strengthening the capability of Thai testing laboratories for the analysis of plastizier in plastic or food contact material
    A. Scientific meeting/Training on the analysis of plastizier in plastic or food contact material
12) Establishing the agreement on the acceptance of analytical result from Thai testing laboratories and the EU Reference Laboratories