

# 学 位 論 文 の 要 旨

論文題目           Integrated Food Control Systems toward Food-safety and Trade-promotion in Myanmar  
(ミャンマーにおける食の安全と貿易振興のための統合的食料管理システム)

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## **Purpose and Objectives**

Myanmar exports a variety of primary produces and stands as the leading country among ASEAN countries in production and export of pulses and beans as a world second largest exporter of bean (dry). For achieving the export-led growth in combating poverty, it is requisite to capitalize in food production system of food sectors at primary level, processing level, etc. Even though one of the three main objectives of Myanmar agriculture sector is to increase foreign exchange earnings by export, over 90% of Myanmar primary produces were sold to the countries with less rigorous SPS regulation requirements. To become a market-oriented agriculture production country, Myanmar needs to invest in food control in production system to take part in global value chain effectively.

The main purpose of this study is to explore the necessity of the food control systems integration for trade and health efficacy in Myanmar. The five specific objectives are (1) to access the deficiency of standard SPS diplomacy in trade and the capacity of food control laboratories involved in Myanmar quality infrastructure , (2) to explore domestic food safety by assessing food control regulatory principles managed by the concerned authority and how they implement in reality, to investigate socio-economic condition of street food vendors, their understanding on proper practices and to know their opinion on control agency's food control, to examine socio-economics situation of street food consumers and their opinion on control agency's food control (3) to investigate how food control in fishery sector is achieved by CA and firms for export success and to examine the challenges firms faced for further trade promotion, (4) to access Japanese food control system in monitoring & inspection of imported foods at national level, prefecture level and to explore how Japan provides food control for consumer protection, to review the import food monitoring system of Myanmar and identify the weakness of the system for protection of consumer against the adulterated imported foods and (5) to provide recommendations in food control system integrations towards trade success and food safety.

## **Methodology**

A number of studies were carried out using eight semi-structured questionnaires comprised of three types of questionnaires for the case study of street food sector, two types of questionnaires for the study in fishery sectors, two questionnaires for import food monitoring case-study and one questionnaire for interviewing with food control laboratories in Myanmar. All together 266 respondents contributed for the accomplishment of all case studies. The respondents are food authority, laboratory technicians, vendors, consumers, competent authority in fish sector, approved fishery production plants' managers or owners, officials from Hiroshima quarantine station and officials from a private inspection corporation in Japan. The case studies employed descriptive statistical analysis, inferential statistical analysis, compliance-based analysis and capacity-based analysis. Primary data as well as secondary data were used and surveys were carried out in 2013, 2014 and 2015.

## **Assessing the Capacity of Food control laboratories involved in Myanmar National Quality Infrastructure**

At national level, the credibility of food control laboratory's services is vital to support the enforcement activities with analytical results used in health and trade sectors. The main targets are food control laboratories including the food laboratory of FDA- the food authority of Myanmar. The interviews were made with responsible agencies involved in Myanmar Quality Infrastructure including FDA. Very little information was available regarding the functional areas of the NQI in Myanmar for quality management needed for society and business concerns. It is important to comprehend the role and capacity of these agencies so as to know if Myanmar has a sound National Quality Infrastructure for better market access. All the agencies involved in MNQI relate with at least one functional area of NQI to all four functional areas. Depending on the functions of NQI, public institutions in Myanmar can be generally categorized into two such as (1) testing and inspection agency (Conformity assessment function) and (2) accreditation agency that accredits for the testing agency and inspection agency (Accreditation function and three other functions).

It was found that Laboratory and Inspection services faced the accreditation problems. The specific technical expertise along with its control system is required for every commodity along the food chain. The responsibility of vertical chain food control (from farm to export) should be taken by one institution equipped with financial and technical supported by public agencies involved in quality infrastructure. A strong coordination is required reducing overlapping tasks and to achieve the goal, export success. Myanmar is in transition period, changing its economy into market oriented one. All-round development in respective fields are constantly pursued by the State; including designing National Export Strategy in which quality management is the prim-mover for export promotion. However, many impediments along the supply side and demand side are making the development pace to a somewhat slow. Accordingly, considering the current situation of food control system supported by MNQI, urgent improvements are needed in coordination of food control laboratories now working in quality management circle toward export-led growth in Myanmar.

### **Food control in informal sector: Street food control**

Street foods vending offers economic benefits to vendors and nutritious foods for urban consumers, especially in developing countries. Yangon City Development Council (YCDC) is mainly responsible for controlling food stalls in Myanmar. The aims of this study were to investigate the authority's controlling aspects of street foods towards safety, to investigate the vendors' understanding of proper practices for safety and also to find out the constraints that prevent them from following proper food handling practices. Interviews were conducted with the authority from the health department of the YCDC. A total of seventy two (n=72) street food vendors from the downtown area included. Demographic profiles of vendors, their food safety knowledge, constraints regarding proper handling practices etc. were assessed by using a semi-structured questionnaire. It was found that the YCDC had already established five key components of food control system for controlling food stalls, however, street foods was not under control if comparing with other stationary food stalls. That situation prevented the opportunity to educate vendors. Lack of availability of clean water sources and self-reported food safety knowledge weakness were two main constraints in practicing proper handling practices among other results.

Street foods consumption is inevitable for city dwellers; yet a little has been known in Myanmar about the consumer's attitudes on this informal food sector from safety perspectives. The aim of this study was to explore street food consumers' attitude towards food handling practices and safety of street foods in Yangon, Myanmar. A total of one hundred and sixty seven (n=167) street foods consumers took part in this study. Demographic profiles of consumer respondents, their opinion in comparison with street foods and other food stalls, reasons for buying and commonly purchased items of street foods, their experience on street food safety, their attitude towards the vending practices of the vendors from safety aspects were conducted in this study. Among other findings, this study found that more than 75 % thought that street food stalls should be under the

authority's control for safety. Most of them 65% had better impression on the sanitary condition of the stationary food shops if comparing with that of street food shops. Nearly 89% responded that they were not satisfied with the safety of street foods. Easy accessibility and saving time are the two main reasons for consumption of street foods. Very little study of this kind was conducted and this study could contribute policy makers.

#### **Food control in Formal sector: Fishery food control for Export**

The recognition of Myanmar competent authority CA for fishery products export to EU was approved in 2009 resulting to 20 approved fishery processing plants in the EU publication list. This case study aimed at characterizing food control for the trans-boundary fishery trade specifically, from the points of view of both public food control provision and firm level adoption of food safety standards. Interviews with the responsible personnel from the Fishery Inspection and Quality Control Division were conducted. Field surveys were carried out at approved fishery factories to assess their adoption of private and public standards, to identify incentives for adoption of HACCP and to find out challenges in practicing food safety management system at the firm level. This study showed that food control by the CA plays an essential role for the export success of firms. Regardless of how small or big the approved firms are and whether they possess private certificates or not. To comply with regulatory and customers' requirements and to get access to new markets are three major incentives towards the adoption of HACCP system. The need to retain trained production staffs and managerial staffs are two major challenges in the adoption of HACCP for the firms.

#### **Import food monitoring in Myanmar and Japan**

When it comes to food control in transboundary food trade either export or import, it is vital to have sound NQI designed for supporting the implementation of food control measures aimed at quality assurance provision in export and protection of consumer against adulterated foods in import. Thus, responsible agencies, its regulatory framework in monitoring import food at quarantine stations and national standards for technical references are determining factors weighed with international accepted standardized guidelines particularly CODEX.

The characteristic of the food control system of Myanmar for import food monitoring is generally in accordance with GL47/2003 CODEX, the international guideline other than uniformity in nationwide implementation. The link between the food authority and food control at quarantine stations is totally lost. Import food safety is, in fact, the concern of most Myanmar population including food importers, food exporters and inspectors. According to the survey conducted in 2012, not all food inspectors showed strong confidence in the trans-boundary food control inspection in which they were professionally involved (Wai and Yamao, 2014d). Myanmar food control system for monitoring in transboundary food trade found conventional while relying on reactive measures (Wai and Yamao, 2012b). For preventing the adulterated food import, monitoring of import foods needs the integration of food control system in technical and managerial capacities so as to implement import food control effectively.

For the case of Japanese import food monitoring system, it employs global risk-based inspection model. The surveyed private inspection institution stressed that 11% physical testing of all imported foods was risky. Given the advantage of technological improvement in food production, it is still possible for Japanese import food controlling agency MHLW to rely on document checking for ensuring food safety. Even so, two tiers of checking: document checking and physical checking, are still necessary for import food monitoring. In terms of food control coverage along food chain in export countries, Japanese import food monitoring seems weak, if comparing with EU system. In actual fact, Japan also restructured in consort with the 2009 reform of EU. Japan starts taking investigation on food control systems of exportable items in the third country in 2009. It is a new preventative approach that covered 27 investigations in export countries even though it could not cover all import items yet. Although it is not exactly required by law, Japan's import food control is streamlined in accordance with the global trend. As regard with sharing responsibilities between public and private laboratories, it was found that Japan allocates its resources at best. Testing the susceptible imported foods is carried by private

testing institution with the expense of importers whilst food authority pays attention more on standardization, risk-management and other surveillances activities of food control measures.

### **Conclusion and Recommendations**

Food control measures are to address the potential risk arise in food chain for protecting consumers, risk-based food control is necessity for food sectors whether it is for domestic or foreign markets. A state-led effort in food control is not always feasible all along especially in trade interest: export success. The guiding role of the food control authorized agency should not be compromised by taking the role in food testing services. It would be better-off for food control agencies if they could engage more in decision making role with robust mechanism of food policy, instead of taking the role in (testing) services. The bottom line is the investment in food control measures must support and reflect the need of domestic food sector and the priority of nation economy strategically.

Food export country needs to focus on competency of testing facilities (establishing accreditation board), farm level quality assurance system (process standard, product standard) to ensure the integrity of the produces. Most of these work demand government investment for promoting agribusiness in agriculture value chain. As regard with farm level food control, the investments of multinational enterprises MNEs in agriculture sector should be encouraged through the inflow of foreign direct investment FDI for export-oriented growth. For food import country, the task of testing (laboratory) services can be shared between public and private but they must be under national level control agency's registration and accreditation. Private can play the role in testing (even inspection service partly) while public agency remains playing the role in monitoring, controlling and surveillances for ensuring socially optimal food safety level.

Moreover, the level of investment in quality Infrastructure that supports food control system and the institutionalization of the widespread informal–small size businesses are two main fundamental factors that indicate the success or the failure of food control measures devised for health and trade interests.