

2013

Food Safety Control Measures

Country Report for Myanmar



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List of acronyms

ADB	Asian Development Bank
AMSS	ASEAN Member States
ASEAN	Association of Southeast Asian Nations
CDC	City development committees
CI	Consumers International
CNFC	Central Food and Nutrition Committee
CSO	Civil society organisation
EU	European Union
FAO	Food and Agriculture Organization
FDA	Food and Drug Administration
FDSC	Food and Drug Supervisory Committee
FIDSL	Food Industries Development Supporting Laboratory
FSWG	Food Security Working Group
GAP	Good agricultural practices
GHP	Good handling practice
GAG	Grant Assistance for Grassroots
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
GMOs	Genetically modified organisms
GMP	Good manufacturing practice
HACCP	Hazard analysis critical control points
IEC	International Electrotechnical Commission
IPM	Integrated pest management
ISO	International Organization for Standardization
KII	Key informant interviews
MCU	Myanmar Consumers Union
MAS	Myanmar Agricultural Service
MAFPEA	Myanmar Agro-based Food Processors and Exporters Association
MIDC	Myanmar Industrial Development Committee
MFDDBA	Myanmar Food and Drug Board of Authority
MITS	Myanmar Inspection and Testing Service
MoC	Ministry of Commerce
MoH	Ministry of Health
MoST	Ministry of Science and Technology
MSTRD	Myanmar Science and Technology Research Department
NGO	Non-governmental organisation
NFL	National food law
OC	Organochlorines
PPD	Plant Protection Division
RTD	Round-table discussion
SME	Small and medium-size enterprise

SPS	Sanitary and phytosanitary
UMFCCI	Union of Myanmar Federation of Chambers of Commerce and Industry
UN	United Nations
WHO	World Health Organisation
WTO	World Trade Organisation

Executive summary

As an ASEAN member country and sharing international borders with Bangladesh, China, India, Lao PDR and Thailand, Myanmar has great potential to be an economic power in the South-East Asia region. However, the ongoing political crisis has alienated the country from the rest of the world and left the country languishing as one of the world's least developed nations. Myanmar has addressed food safety issues to a certain extent with its National Food Law, promulgated in 1997. However, the country still lacks the functional capability to address growing international concerns about the safety of food products being imported from countries like China.

The research carried out by Consumers International indicates that Myanmar is a dumping ground for substandard products that are either legally imported or smuggled across the country's porous borders. This issue is exacerbated by the fact that the authorities lack sufficient resources to control the quality of the full range of products available on the market. As a member of the Codex Alimentarius Commission (CAC) and World Trade Organization (WTO), Myanmar needs to emulate the safety and quality parameters laid down in the measures used in other ASEAN member countries like Malaysia, Singapore and Thailand to strengthen food safety control in the country. Efforts are needed to streamline food safety control measures so they cohere with existing global trends. This research identified different needs for addressing the above capacity gaps and gives the following recommendations for improving food safety control measures in the country:

- a. **The development of a comprehensive national food safety strategy** – As food safety is a multi-sectoral activity, the cooperation of producers, traders, industry, consumers and government is required, as is the involvement of the scientific community. This can be achieved through a well-designed national food safety control strategy. As such, Myanmar should develop, with the support of various participants, a strategy that clearly defines the roles of government agencies, various sectors of the economy and consumers, and that establishes mechanisms for cooperation and the means for dealing with newer or emerging challenges related to human health and the national economy. It must also ensure that available manpower and financial resources are used in a coordinated way in order to achieve optimal results. The development of this kind of strategy at the national level must be made a priority.

- b. **The development of food legislation** – As identified in the previous section, a National Policy on Food Safety should be formulated in order to establish a national institutional framework (a National Council on Food Safety) that will consolidate all existing food safety and control systems in the country and ensure that high standards in food safety are attained. The specific goals of the National Policy on Food Safety should be to:
 1. review, update and promote all government policies, laws and regulations concerned with the control of food safety during policy formulation and food production, storage and handling, processing/preservation, trade, transportation, marketing, preparation

and consumption;

2. improve the quality of health care delivery by ensuring that only foods that are safe, wholesome and of good quality are produced and/or marketed in Myanmar in accordance with prescribed food safety management systems such as, but not limited to, hazard analysis and critical control points (HACCP), and that these foods are made accessible and affordable for consumers;
3. update, strengthen, harmonise, integrate and publicise all existing laws/regulations, standards and codes of practice with respect to the control and regulation of food safety practices; eliminate areas of duplication/conflict, and make them more relevant to the needs of the country, as well as creating a national database for future planning;
4. establish a risk-based food control system that will assist in setting appropriate levels of protection for consumers and also prioritise food safety programmes and monitor safety trends in the national food supply.

c. **Infrastructure development** – Myanmar should focus on developing infrastructure, which includes equipping and maintaining laboratories with enhanced capacity and up-to-date testing facilities.

d. **Technical assistance** – In Myanmar, technical assistance should focus on:

1. the formulation and enforcement of food safety standards for imported and locally manufactured food
2. implementing food safety best practices (labelling, packaging, details, safety and quality marks) by emulating best practices from other ASEAN countries
3. training staff to implement and enforce food control measures (qualified and certified food inspectors and laboratory technicians)
4. setting up a national-level committee for consumer protection with a sub-committee on food safety and all other relevant areas
5. developing a consumer protection policy
6. designing a long-term strategy on consumer education programmes
7. promoting food safety among cottage industries through a national development scheme

1.

Food safety and consumer protection in Myanmar

1.1 Food safety concerns and consumer protection in Myanmar

In a developing country like Myanmar, human exposure to and health risks arising from the presence of hazardous chemicals like pesticides, lead and mercury are of particular concern to consumers. Other product- and service-related areas of concern for Myanmar's consumers include:

- the increasing prices of goods
- the actual shelf-life of products being shorter than is advertised or notified to consumers
- goods that are poor in design or quality

The list of hazardous substances has been further extended to cover genetically modified organisms, allergens, veterinary drug residues and growth-promoting hormones used in the production of animal products. Consumers expect protection from hazards occurring along the entire food chain from the primary producer to the consumer. In the early 1990s, cases arose where consumers became concerned about the presence of organochlorines (OCs) in the insecticides used on national food crops. Bans and restrictions on the use and import of a range of OC-based insecticides followed and the levels of OC in foods subsequently decreased; however, these insecticides are still being widely used in the country. Furthermore, there are concerns about the use of pyrethroids and also aflatoxin (*Aspergillus flavus*) contamination affecting peanut, chilli and maize crops.

In 2010, a post-market survey was carried out on foods such as soft drinks, pickled tea leaves, fish paste and chilli powder. It was reported that one fish paste sample out of 147, 10 chilli powder samples out of 225 and nine chilli sauces out of 72 were found to contain unpermitted colour dyes. Consumers express concern about the presence of chemical dyes which are banned for use in foods such as Auramine O being detected in edible oil imported through border routes, locally produced ready-made fish paste and pickled tea leaves or the red chemical dye Rhodamine B found in chilli powder.

When visiting local markets in Yangon, the CI team witnessed first-hand the prevailing unhygienic conditions in food handling and sale in the domestic market.

1.2 Consumer protection against unsafe food in Myanmar

The Union of Myanmar has yet to enact its principal Consumer Protection Act. At the time this research was being carried out, this draft law had already been tabled in parliament. The Ministry of Commerce (MoC) is the official focal point of the ASEAN Committee on Consumer Protection (ACCP).

Since 2007, MoC has been involved in consumer protection activities such as proposing the principal Consumer Protection Law, preparing a consumer redress scheme and raising consumer awareness. MoC also takes part in raising consumer awareness, particularly with regard to consumer protection issues, by holding seminars and discussions with locals throughout the country. A few consumer associations have also recently been established in Myanmar. One such association, the Myanmar Consumers Union (MCU), was established in 2012 and worked as CI's partner for this research.

2.

Food safety in the food and agricultural trade

2.1 Food safety compliance

The Food and Drug Administration, one of the programmes under the National Health Plan, makes the Department of Health responsible for food and drug safety and control in Myanmar. Since the Public Health Law was enacted in 1972, a number of other regulations have been passed to strengthen food safety control in the country. In 1995, the Food and Drug Division, under the Department of Health, was upgraded, becoming a full director-led department – the Food and Drug Administration (FDA) – with two divisions: the Food Division and the Drug Division. Although the National Food Law was enacted in 1997, a number of issues prevented it from being successfully enforced. Currently, different committees work simultaneously to ensure the efficient and uniform delivery of food safety control in Myanmar. However, there has been very limited progress in controlling the regular outbreaks of food-borne illness.

Myanmar is a signatory to the ASEAN Trade Protocol and regional Sanitary and Phytosanitary (SPS) and Technical Barrier to Trade (TBT) agreements, and FDA operates as the contact point for Codex. At present, illegal cross-border trading is rampant, yet FDA lacks the resources required to adequately inspect food products in the local market. The secondary sources of information show that approximately 70% to 80% of food sold on the market is not safe to eat. Most contain fake colourings and chemicals which are very harmful to consumers' health. This problem of substandard food products being available on the market is exacerbated by the imports brought into Myanmar illegally. Food safety compliance in Myanmar is now at a crossroads and tremendous efforts are required to strengthen the system.

2.2 Food import control system

Myanmar has been a member of the World Trade Organization (WTO) since 1995, but due to its extensively controlled economy, foreign trade has not been liberalised in practice. Myanmar records the lowest levels of trade openness in South-East Asia. In terms of official trade, revenues from gas exports are much higher than revenues from the country's traditional exports of agricultural and forest products, gems and live animals. As a WTO member, the official tariff figure is low on paper – standing at 3.9% in 2007 – and is likely to continue at more or less the same level. However, non-tariff measures appear to be significant, considering that import and export licenses are issued on a case-by-case basis. Import quotas are also in place for certain items like trucks, buses and certain types of car. A number of export items are also limited, including rice in order to stabilise the domestic rice market. Certain other safeguards exist in Myanmar to protect domestic industries, such as those involved in plastics and food.

Myanmar has bilateral trade agreements with many countries, namely the People's Republic of China, India, Indonesia, Israel, the Republic of Korea, Lao People's Democratic Republic, the Philippines, Thailand and Vietnam. These agreements are general in character and incorporate the aim of their being further developed and strengthened in all possible ways. The trade relations established between Myanmar and the above-mentioned partner countries involve the principles of equal rights and mutual benefits. Myanmar is also the most favourable regime under the European Union's Generalised Scheme of Preferences, which enables duty free access to the EU for the export of all products, except arms and ammunition

Officially, there are 12 recognised border checkpoints in Myanmar. However, unofficially, there are approximately eight checkpoints where illegal trade is carried out with neighbouring countries. Imported food consists of milk and milk products, fats and oils, food additives and raw materials for local food manufacturers. Other imported and exported food includes fish, prawns, shrimps, meat and meat products, vegetables and fruit, which are controlled by the fisheries, livestock and agriculture departments respectively. Pulses and beans, and locally manufactured food such as soft drinks, green tea, preserved fruits, alcoholic beverages and spices are exported from Myanmar.

The key informant interviews (KIIs) and round-table discussion (RTD) served to identify which countries imported which kinds of goods:

- China – biscuits, fruit, baked goods and edible oils
- Thailand – palm oil, ready-made foods, vegetable oils, non-alcoholic drinks and rice
- Australia – milk and milk products
- New Zealand – milk and milk products

According to the primary research and information provided by the Myanmar Fisheries Federation and Livestock Breeding Federation in Yangon, illegal trading across Myanmar's borders equals the levels of legal trade. Consumer products like fuel, food and drugs are imported without permission and taxation, and jade and gems, animals and mining products are illegally exported. The most important illegally imported product is fuel, followed by edible palm oil, alcoholic drinks and cigarettes which have not been approved by FDA. It is reported that Myanmar is flooded with illegally imported Chinese goods smuggled across the porous border between the two countries and are substandard, if not harmful.

To reduce illegal trade, the Government of Myanmar has permitted the trade of 19 previously banned items, including tinned food and drinks, chewing gum, seasoning powder and 32 different kinds of alcohol. Fiscal measures have also been taken, reducing commercial tax to 8%. The Ministry of Commerce also issues trading licences to small traders. The Union of Myanmar Federation of Chambers of Commerce and Industry (UMFCCI) was established to strengthen and promote the role of business and industry in the country. UMFCCI operates among private businesses in the country and maintains close contacts with its foreign counterparts. Cleaner technologies and production techniques are gradually being promoted among UMFCCI members and, through them, to the wider business sector.

The Myanmar Agro-based Food Processors and Exporters Association (MAFPEA), which is a member of UMFCCI, is one of the leading organisations seeking to improve the quality of local agro-based food products, link up the various stakeholders in the local and international food supply chain, support the export activities of local agro-based food processors and improve the knowledge, technology and quality of local agro-based food processors. The association established the Food Industries Development Supporting Laboratory (FIDSL) with international standards to ensure the production of quality food products in Myanmar. The Asian Development Bank (ADB) and Government of Japan provided technical assistance to improve this laboratory's capacity.

In an attempt to provide food safety for consumers and decrease illegal trading, the Border Trade Department of the Ministry of Commerce has posted mobile teams at key border checkpoints on the main trade routes: the Muse-Mandalay and Myawady-Yangon routes. These mobile teams also comprise officials from the Customs Department, the Myanmar Police Force, local administrative bodies, border trade associations and media personnel



CI team meeting with the Myanmar Fisheries Federation and Livestock Breeding Federation in Yangon

3.

Myanmar's food safety control system

3.1 Food control management

The secondary research and FDA Myanmar Country Report show that food control management in Myanmar involves multi-sector departments and services including the Ministry of Health (MoH), Ministry of Commerce (MoC), Myanmar Scientific and Technological Research Department (MSTRD), Department of Fisheries, the Livestock Breeding and Veterinary Department, Post-Harvest Technology Application Centre, Myanmar Agricultural Service (MAS), Myanmar Customs Department, Ministry of Industry, Ministry of Hotels and Tourism, city development committees and Development Affairs Department. The following agencies are responsible for areas relevant to food safety control in Myanmar:

- primary production: Ministry of Agriculture and Irrigation, Ministry of Livestock, Fisheries and Rural Development
- primary food processing products (semi-finished): Ministry of Industry
- secondary food processing products (ready to eat): Ministry of Health, Ministry of Industry, Ministry for progress of Border Areas and National Races and Development Affairs, Ministry of Cooperatives and city development committees
- food importation: Ministry of Health, Ministry of Commerce and the Myanmar Customs Department
- retail handling of prepared food: city development committees, Ministry of Health, Ministry for progress of Border Areas and National Races and Development Affairs

MoH undertakes all necessary measures in matters relating to food safety in accordance with the notifications and provisions of the National Food Law (NFL). This 1997 law aims to ensure that the public consumes food of genuine quality and free from danger and to protect the public from consuming food that may be hazardous to health. The Food and Drug Administration Department (FDA), under the MoH, is the agency responsible for the proper supervision, control and regulation of the production, import, export, storage, distribution and sale of food. FDA is the contact point for the Codex Alimentarius Commission (CAC) and has two divisions: the food division and the drug division. Each division operates enforcement and laboratory units. The food enforcement unit covers regulatory affairs, conducts inspections and provides training and advisory services. The food laboratory unit operates microbiological and chemical laboratories for food and water testing.

Apart from the FDA, the Myanmar Food and Drug Board of Authority (MFDBA), the Food and Drug Supervisory Committees at the central, states/divisional, district and township levels and the Advisory Committees also work to control food quality in Myanmar. The NFL empowers MFDBA, chaired by the Minister of Health, to lay down policy and guidance on food production, distribution, importation, exportation, quality assurance, standard setting,

controlled food classification, food additives, substandard foods, labelling and advertising. It also empowers MFDBA to take action in accordance with the contents of the NFL against those who fail to comply with the regulations. The membership of MFDBA comprises officials from relevant government departments and professionals from relevant fields. Three main food-safety-related committees have been established in the country. Table 1 illustrates the composition and functions of the respective food committees in Myanmar.

To ensure quality control, domestic food production requires FDA endorsement prior to marketing. The assessment involves initial and periodic inspections of the establishment regarding good hygiene and handling practices in line with food hygiene and hazard analysis critical control point (HACCP) guidelines, appropriate labelling and safe, quality products. Foods from the domestic market are checked periodically for safety and quality.

To ensure consumer protection, required corrective actions have been put in place for controlling substandard food products. The Food and Drug Administration issues health certificates for licensing, importing and exporting foodstuffs.

Table 1: Food committees in Myanmar

Committee	Description
Food and Drug Supervisory Committee	The restructuring of the Food and Drug Supervisory Committee (FDSC) at various levels such as the central, state and division, district and township levels was carried out in the latter part of 1992 according to the provisions of the National Drug Law in order to ensure efficient and uniform control throughout Myanmar. The membership of the central-level committee comprises the Director General of the Ministry of Health acting as a chairman, the Director of the FDA as secretary and representatives from the City Development Committee of the concerned city, Myanmar Police Force, General Administration Department and the Department of Development Affairs. An FDSC Directives Sub-committee has been operational since 2002.
Advisory committees	The Food Advisory Committee, Food Technical Affairs Sub-committee and Food Orders and Directives Sub-committee were formed in 2002.
Central Food and Nutrition Committee (CFNC)	Under the guidance of the National Health Committee, the Ministry of Health established CFNC with personnel from the various ministries concerned with food and nutrition. One supervisory committee and six working groups were established under the CFNC to oversee and implement activities related to improving household food and nutrition security for the people of Myanmar.

Food safety control measures in Myanmar are carried out in three different areas of the food supply chain:

- imported foods
- exported foods
- food production at the domestic level

Imported or exported food should comply with the National Food Law and internationally recognised procedures. For imported foods, the FDA assesses the documentation regarding the good hygiene practices (GHP) of foreign manufacturers of these foods (such as factory registration, product specification and certificate of analysis, etc.). The FDA also checks whether the foods comply with specification or international standards.

For exported foods, the FDA issues an Export Health certificate, certificate of analysis and manufacturer recommendation, etc. As well as the FDA, the Department of Agriculture, the Directorate of Trade, under the Ministry of Commerce (MoC), and the Customs Department are also responsible for controlling imported and exported foods. Under the food control measures, MoC supervises the issue of export and import licenses by checking the recommendations from relevant ministries, standards, prices and trademarks.

For locally produced food, supervision is divided into three major groups depending on the size of the business:

1. food produced in factories
2. food produced in small and medium-sized enterprises (SMEs)
3. food produced at the family-business level

Good manufacturing practices (GMPs): It is mandatory for food processing industries in Myanmar to practise GMPs; hence, the FDA encourages all food-manufacturing sectors to have their food control officers implement the hazard analysis critical control point (HACCP) and risk analysis approaches. The FDA issues GMP recommendations for food processing industries that are valid for two years. It conducts three regular inspections annually, and it reviews microbiological and chemical laboratory test results on the safety and quality of food produced at these factories in accordance with the Codex standard.

Good hygiene practices (GHPs): The Directorate of Industrial Coordination and Inspection, under the Ministry of Industry, issues one-year GHP licenses to food processors.

To control street food, restaurants and meat products (and in accordance with the 1993 Development Committees Law), the city development committee's health department is tasked with: issuing health certificates to and recommending the licensing of food stalls; performing medical examinations of food handlers; delivering training on food safety and food hygiene; ensuring the safety of food manufacturers and food stalls; and providing permits for slaughterhouse operations and the sale of meat.

City development committees (CDCs) are also part of the Food and Drug Supervisory Committee specifically concerned with street food and food service establishments. CDCs have licensing authority within their jurisdiction in the respective city.

The Plant Protection Division of Myanmar Agriculture Services (MAS) under the Ministry of Agriculture and Irrigation (MoAI), in accordance with the 1990 Pesticide Law, manages agri-product control measures, chemical residue analyses, registered pesticide toxicity assessments and the monitoring of residual levels of pesticides in line with ASEAN maximum residue limits (MRLs).

According to the Plant Pest Quarantine Law enacted in 1993, MAS's Plant Protection Division (PPS) is legally responsible for issuing phytosanitary certificates and import certificates.

Inspection services: FDA food control measures generally involve two types of inspection:

- at the factory level (conformity assessment)
- pre- and post-market surveillance of food sold (whether imported or locally produced) in the domestic market

FDA inspections can therefore be understood to focus on food factory inspections and pre- and post-market surveillance for certain varieties of food items sold on the domestic market rather than covering the entire food chain. The food sampling required for the FDA's fit for consumption certificate is occasionally undertaken by the Myanmar Inspection and Testing Service (MITS), an independent service that is officially recognised by the national authorities. It was established by the then Ministry of Trade (now Ministry of Commerce) Notification No 29/90 of 10 October 1990, and is affiliated with Myanmar Agricultural Produce Trading under the Ministry of Commerce.

3.2 Legislative measures

Principal food safety law

Information gathered through research and the KIIs shows that the National Food Law (NFL) of March 1997 is the principal food safety law enacted by the Government of Myanmar. The NFL seeks to ensure the availability of genuine quality, safe and hygienic food in the country and is based on WHO model food laws. It requires that samples of food items for import, export or sale in the domestic market be checked to ensure that they meet the prescribed and required standards. The manufacture of controlled foods must be performed in accordance with the FDA food manufacturing practices.

The four aims of the NFL are:

- to enable the public to consume food of genuine quality that is safe and hygienic
- to prevent the public from consuming food that is hazardous or injurious to health
- to systematically supervise the production of controlled foods
- to systematically control and regulate the production, import, export, storage, distribution and sale of food

Other regulations

- **Public Health Law (1972)** is concerned with protecting people's health by controlling the quality and cleanliness of food and drugs and environmental sanitation; controlling epidemic diseases; and regulating private clinics. In 2005, the Law was revised to bring it in line with international health regulations.
- **Prevention and Control of Communicable Diseases Law (1995)** lays down the measures to be taken in relation to environmental sanitation, the reporting and control of epidemic outbreaks and the penalties for those failing to comply.
- **Pesticide Law (1990)** is based on the FAO guidelines on pesticides. In the exercise of powers conferred under section 50 (a) of the Pesticide Law, the Ministry of Agriculture and Irrigation with the approval of the government, prescribed the procedures relating to the Pesticide Law in 1991. In 1992, the Government of the Union of Myanmar formed the Pesticide Registration Board (PRB) comprising 10 competent authorities from the then Ministry of Agriculture, Ministry of Health, Ministry of Forestry, the Livestock Breeding and Veterinary Department (under the Ministry of Livestock, Fisheries and Rural Development) and the Ministry of Commerce.
- **Promotion of Cottage Industries Law (1991)** regulates and promotes cottage industries, and its provisions:
 - o enable consumers to purchase standard quality goods which are safe for consumption
 - o promote cottage industries by fostering the implementation of modern technical approaches to increase efficiency
 - o promote the production and sale of standard quality goods, not only on the local market, but also on the foreign market
- **Development Committee Law (1993)** [It was not possible to obtain information on the provisions of this law.]
- **Plant Pest Quarantine Law (1993)** [It was not possible to obtain information on the provisions of this law.]
- **Myanmar Hotel and Tourism Law (1993)** aims to ensure the security of tourists and that tourism services meet with tourists' expectations.
- **Animal Health and Development Law (1993)** [It was not possible to obtain information on the provisions of this law.]
- **Notifications issued in 1993 on:**
 - o manufacturing
 - o sales and distribution
 - o importation
 - o labelling and advertising

National food standards

The Ministry of Science and Technology (MoST) was established to promote the development of science and technology in the country. Its aims and objectives include developing technology in Myanmar for application in industry, education, human resource promotion and development. MoST is organised into the following departments: Myanmar Scientific and Technological Research Department, Department of Atomic Energy, Department

of Advanced Science and Technology, Department of Technical and Vocational Education, Department of Technology Promotion and Coordination and the Materials Science and Materials Engineering Research Department.

One of the functions and duties under the Science and Technology Development Law (1994) is 'conducting standardisations and specifications of weights and measures, equipment and machinery, raw materials and finished goods'. The law assigns responsibility for the conformity assessment and metrology infrastructure to the Myanmar Scientific and Technological Research Department (MSTRD) under MoST. MSTRD is establishing a National Standards Body to:

- implement the function of standardization to be promoted to international level
- provide awareness to people on the importance of standardization
- organise the 19 technical sub-committees for formulating Myanmar Standards from International Standards
- perform as the central library for international standards and references

Former MSTRD officials pointed out that in the 1950s USAID helped establish chemical and food testing laboratories in Myanmar. In those days, MSTRD developed 65 voluntary standards relating to food, but most of these are now out of date and are not applicable to current situations. In 1995, the government formed the Myanmar Industrial Development Committee (MIDC) with 15 ministers as members and two deputy ministers acting as secretary and joint secretary. A working committee implements all the tasks laid down by MIDC with the assistance of nine sub-committees. One of these sub-committees is the Standardisation and Quality Improvement Sub-committee, which drafted the National Standards Law. The draft law is now in the final stages of being adopted into law.

It is important to note that Myanmar assures the quality of its goods manufactured for export using international standards like the ISO 9000 series and, in so doing, is able to overcome non-tariff barriers such as the technical barriers for trade imposed by its target markets. Myanmar food manufacturers that export to foreign markets are increasingly adopting the hazard analysis and critical control point (HACCP) certificate, which conforms to global requirements. The quality standards for products destined for the domestic market are primarily set according to industrial factory standards. However, most of the quality standards used for Myanmar exportable primary products are based on each organisation's own set of standards, which must adhere to Codex Alimentarius standards and the codes of hygienic/technological practice recommended by the 'UN's FAO. For example, the Myanmar Agro-based Food Processors and Exporters Association (MAFPEA) developed voluntary standards on production and management procedures for its 600 association members to adopt and deploy.

In addition, individual businesses have developed on their own initiative industry codes and guidelines relating to consumer protection. Certain industry associations like the Myanmar Pharmaceutical Association, Myanmar Fisheries Federation and others also lay down their own industrial codes or guidelines, which all businesses in the sector in question are expected to comply with.

3.3 Food safety assurance and labelling

Phytosanitary measures

Myanmar is an exporter of agricultural commodities and its major exports are pulses and beans, rice and rice products, maize, oil crops and other cereal crops, etc. The Plant Protection Division in the Myanmar Agricultural Service of the Ministry of Agriculture and Irrigation is legally responsible for: issuing phytosanitary certificates for rice certifying that the products to be exported have been inspected and are free from harmful pests and plant diseases; and checking import certificates together with the certificated goods in accordance with the requirements of the Plant Pest Quarantine Law. Import and export certification is currently being carried out in Yangon, at border entry points and in two inspection stations at Yangon and Mandalay international airports.

GMP measures

The government has made GMP practices mandatory for all food-processing businesses in Myanmar. The FDA encourages all the food manufacturing sectors to implement the hazard analysis critical control point (HACCP) and risk analysis approaches for food control.

- The FDA issues GMP recommendations for food manufacturers that are valid for two years, conducts three regular inspections per year and reviews microbiological and chemical lab test results on the safety and quality of food produced in these manufacturers' factories to check their compliance with Codex standards. The Directorate of Industrial Coordination and Inspection of the Ministry of Industry is the authority that issues licenses to food processing factories in accordance with the stipulations of industrial legislation.
- SMEs are issued with certification on good hygiene practices (GHPs) that are valid for one year. FDA approval has become necessary as supermarkets are creating positive competition in the market. This has prompted a shift from end-product testing to process-based food control.

Labelling

Registration of a food and drug or a license issued under the National Food Law (1997), the National Drug Law (1992) and the Traditional Drug Law (1996) must abide with the order, directions and conditions set by the board of authority with regard to labelling.

3.4 Monitoring and surveillance

The FDA is the agency responsible for conducting market surveillance in Myanmar, which involves:

- Post-market surveillance of locally processed food and imported food

The FDA has a system in place for regularly conducting market surveillance in townships. This is carried out once every two months in the respective townships and products are tested at FDA labs. Market surveillance focuses primarily on processed products, and any violations are usually communicated to consumers via the media.

- Risk assessment on prioritised food commodities

Risk analysis approaches should be applied to both domestically produced food and imported food. However, a main constraint is that existing capacities in food control measures are, despite best efforts, insufficient to deliver these approaches.

3.5 Food testing and inspection laboratories

Numerous food testing laboratories are in operation in Myanmar, managed by both government departments and the private sector. Notable among these are:

- the three public health laboratories of the Department of Health, under the MoH, located in Yangon, Nay Pyi Taw and Mandalay, which conduct routine analysis, compositional analysis and food contaminant analysis
- the Plant Protection Division (PPD) laboratory of the Ministry of Agriculture and Irrigation that conducts chemical residue analyses for pesticide residues
- the seven laboratories within the Livestock Breeding and Veterinary Department which analyse feed
- the five laboratories within the Department of Fisheries of the Ministry of Livestock and Fisheries which conduct quality control analyses for pathogens, heavy metals, parasites, antibiotic residues and sulphur dioxide, etc. and are accredited under ISO 17025
- the MSTRD laboratory that conducts chemical and food analyses
- the laboratory of the Post-Harvest Technology Application Center (PTAC) of Myanmar Agriculture Produce Trading, which conducts laboratory analyses
- private laboratories, including the international-standard Food Industries Development Supporting Laboratory (FIDSL) run by the Myanmar Agro-based Food Processors and Exporters Association (MAFPEA).

For imported food, the FDA issues traders with import health certificates that enable them to apply for import licenses from the Ministry of Commerce. Products are tested at FDA laboratories to check their quality and that they are sanitary prior to their distribution in the market. In order to check for pesticide residues in food, PPD has been surveying and monitoring residues in agricultural food commodities at the field level as well as prior to export. The Food Quality Control Laboratory (FQCL) is one of Myanmar's oldest laboratories, being established in the 1970s as a division of the Department of Health's National Health Laboratory (all under the Ministry of Health).

It is not good if Myanmar's goods are accepted by domestic buyers only; they must also be able to penetrate international markets. For this reason, MAFPEA established the Food Industries Development Supporting Laboratory (FIDSL) in Yangon, which it is hoped will serve as a bridge between government laboratories and private sector beneficiaries (stakeholders, farmers, consumers, importers and exporters) as well as support government laboratories.

FIDSL is an international-standard laboratory which commenced operations in January 2011. It analyses approximately 900 food samples annually. MAFPEA is currently involved in developing a MAFPEA Voluntary Food Standard. Support to set up the laboratory was provided by the Japan Food Research Laboratory (JFRL), the Embassy of Japan in Myanmar, through its Grant Assistance for Grassroots (GAG) programme, the ASEAN-Japan Centre, the Japan External Trade Organization (JETRO) and the Japan International Cooperation Agency



The CI team visiting the Food Industries Development Supporting Laboratory in Yangon

3.6 Education, awareness and training

One of the FDA's priorities is the promotion among food producers of food safety awareness based on IEC materials, the aim being to effectively reduce food safety risks by preventing contamination throughout the food production chain. The FDA is delivering these IEC-based food safety activities in concert with other departments such as those related to agriculture, fisheries and veterinary science. The FDA occasionally releases lists of banned products (mostly comprising traditional medicines and tea leaves) in state-owned newspapers. The FDA also performs an active role in international, regional and local affairs by attending training programmes and standardisation meetings on food safety and quality matters to keep up to date with technological developments and to enhance cooperation with international organisations.

The FDA delivers regular training sessions in areas like GMP for factory managers; food safety awareness for food handlers, restaurant managers and processors; food hygiene and risk; and food analysis (with test kits) for food analysts, particularly those operating at border inspection points. The FDA, in cooperation with the Ministry of Information and Ministry of Health, broadcasts television and radio programmes on good hygiene practices. In addition, the Ministry of Agriculture and Irrigation has piloted organic farming and integrated pest management (IPM) projects, and the Myanmar Agriculture Service (MAS) is delivering GAP training to farmers to reduce the use of agrochemicals to improve the safety and quality of agricultural products.

3.7 Human resource capacity and development

The secondary research shows that most government departments have insufficient numbers of experienced and qualified staff to implement food safety control measures in the country. The FDA's newly appointed inspectors, who are responsible for food safety both at border checkpoints and in the domestic market, need to work alongside experienced inspectors to learn and share experiences while carrying out inspection procedures

In Myanmar, there are three categories of inspector training:

- in-house training
- training delivered in other departments
- training provided by foreigners

Most food safety inspectors benefit from at least one of these categories of training. The research shows that one-third of inspectors are solely responsible for the export sector and only one-fifth for the import sector, whereas nearly half are responsible for both sectors. All inspectors use both quantity and quality parameters in their inspections.

4.

Prioritising recommendations

4.1 Prioritisation and focus areas

The implementation of effective food safety control measures in Myanmar is still problematic. The research shows that the responsibility for food safety control is not shared among all of the relevant government agencies, but this is an area that requires the interaction of all stakeholders in the farm-to-table continuum. There is no holistic, integrated and preventative approach to reducing the risks of food safety contamination covering the entire food chain. Risk analysis is lacking and risk management strategies are ineffective.

The risk communication function in Myanmar is still based on traditional approaches, meaning that when a risk is detected information is shared with the public through the media. There is also a lack of emergency procedures for dealing with specific hazards or failures in the country.

Apart from its National Food Law, Myanmar has no national food safety policy of the kind that is required to coordinate the approaches to food control of all relevant stakeholders, assigning each a set of roles and responsibilities for coordinating all food safety activities. This would assist in delegating responsibilities to others outside the FDA to ensure coordination and cooperation at the national level. It would also limit ineffective control and inefficient performance.

There is no national food control system in place to address Myanmar's specific needs and priorities. The system should contain key components including food legislation (GMO policy) and regulations, policy and institutional frameworks, food inspection and monitoring, food laboratory services, the involvement of all stakeholders and mechanisms for disseminating information to these stakeholders.

Although the private sector is active in Myanmar, the opportunities for the private sector and consumers to express their views and participate in policy formulation are limited. In Myanmar, the public sector (government), private sector (industry) and consumers fail to communicate with each other on food safety matters.

Foods imported across borders are not strictly controlled due to the limited capacities in these areas and smuggling. Indeed, these kinds of illegal imports have given rise to a number of quality- and price-related problems in the domestic market. Certain domestically produced foods, such as pre-packed snack foods produced by small-scale family businesses, cannot compete with illegally imported ready-made snack foods being shipped across borders that often come with foreign-language labels.

In light of the above, capacity building is required to increase the quantity (i.e. of qualified staff and laboratory equipment) and the quality (i.e. technical assistance to be able to cover the scope of control measures to meet international standards) to support the monitoring, surveillance and enforcement activities of the food control system.

Despite its role as the food control authority for all domestically produced and imported food, the FDA is still a small-sized regulatory agency in Myanmar. Its primary obstacle in delivering this role is insufficient capacity. The delivery of all of the possible control measures involved in comprehensive food safety control represents a considerable challenge for the Administration. Expanding the FDA's capacity and infrastructure is, therefore, the top priority for enhancing food control measures, and the FDA's laboratory infrastructure requires urgent expansion to meet current needs.

In addition, the FDA needs more international training in enforcement and laboratory analysis to enable it to conduct testing during outbreaks of food-borne illness. Existing laboratory facilities need to be upgraded to enable the FDA to deliver a fully comprehensive food safety control service that accords with international practices, particularly those of the ASEAN. Apart from the FDA, other agencies have also expressed the need to increase their capacity. The research shows that for PPD to implement and further develop existing international and regional standards in phytosanitary measures, it will need to overcome its current financial and infrastructural limitations.

Table 2 describes the main focus areas and strengthening activities required to improve food safety control measures in Myanmar.

Table 2: FSCM strengthening prioritisation scorecard for Myanmar

Focus area	Strengthening activity
Laws and regulations: food safety policy	<ul style="list-style-type: none"> • expedite the finalisation and adoption of food safety policy, related laws and regulations
Food safety compliance and food safety agencies: inter-ministerial coordination and overlapping responsibilities	<ul style="list-style-type: none"> • streamline coordination between the authorities responsible for food safety control
Food import control system: effective border controls (inspection and monitoring)	<ul style="list-style-type: none"> • strengthen food inspection, surveillance and monitoring at border checkpoints • improve the capacity of existing food testing laboratories and investigate the possibility of integrating all laboratories

Table 2: FSCM strengthening prioritisation scorecard for Myanmar (continued)

Focus area	Strengthening activity
International participation and recognition: expert support on food safety issues	<ul style="list-style-type: none"> • implement food safety best practices (labelling, packaging, details, safety and quality marks) by emulating best practices from other ASEAN countries • establish mobile teams and upgrade the existing FDA laboratory infrastructure across Myanmar • adapt Codex standards for local food production, including import and export control • develop certification methods for organic and GM foods produced in the country • Develop strong networks at the local & ASEAN level
Human resource development	<ul style="list-style-type: none"> • recruit, retain and train staff to implement and enforce food control measures (qualified and certified food inspectors and laboratory technicians).
National standards on food safety and management	<ul style="list-style-type: none"> • encourage MSTRD (under MoST) to develop a draft law on standardisation • establish a food standardisation section to develop food safety standards
Consumer representation	<ul style="list-style-type: none"> • develop a consumer protection policy • design a long-term strategy for consumer education programmes • encourage the Ministry for Information and Communication to develop educational programmes that reach out to the grassroots level to raise awareness about potential risks related to food safety • establish a Central Consumer Protection Committee whose members come from all relevant ministries in the country
Education, awareness and training	<ul style="list-style-type: none"> • undertake education/awareness-raising activities to reach out to consumers • organise study tours to food safety agencies in other ASEAN countries to share good practices in food safety management and control • initiate educational campaigns that promote hygienic agricultural practices and risk prevention among government staff, farmers, food handlers and consumers
Research and development	<ul style="list-style-type: none"> • deliver training and development in SPS management in order to build a viable SPS system

Table 2: FSCM strengthening prioritisation scorecard for Myanmar (continued)

Focus area	Strengthening activity
Food safety compliance	<ul style="list-style-type: none"> • establish an accreditation body and undertake laboratory accreditation in accordance with relevant international standards, GAPs, GHPs and GMPs.

4.2 Developing national action plans

With Myanmar integrating into the ASEAN Economic Community and regional markets, the time is right to strengthen food safety control measures and ensure tangible outcomes relating to food safety nationally. This will require the effective and systematic channelling of resources and efforts in the following areas:

a. The development of a comprehensive national food safety strategy – As food safety is a multi-sectoral activity, the cooperation of producers, traders, industry, consumers and government is required, as is the involvement of the scientific community. This can be achieved through a well-designed national food safety control strategy. As such, Myanmar should develop, with the support of the various participants, a strategy that clearly defines the roles of government agencies, various sectors of the economy and consumers, and establishes mechanisms for cooperation and the means for dealing with newer or emerging challenges relating to human health and the national economy. It should also ensure that available manpower and financial resources are used in a coordinated way and thereby achieve optimal results. The development of this kind of strategy at the national level must be made a priority.

b. The development of food legislation – As identified in the previous section, a National Policy on Food Safety should be formulated in order to establish a national institutional framework (a National Council on Food Safety) which will consolidate all existing food safety and control systems in the country and ensure that high standards in food safety are attained. The specific goals of the National Policy on Food Safety should be to:

1. review, update and promote all government policies, laws and regulations concerned with the control of food safety during policy formulation and food production, storage and handling, processing/preservation, trade, transportation, marketing, preparation and consumption;
2. improve the quality of health care delivery by ensuring that only foods that are safe, wholesome and of good quality are produced and/or marketed in Myanmar in accordance with prescribed food safety management systems such as, but not limited to, hazard analysis and critical control points (HACCP) and that these foods are accessible and affordable for consumers;
3. update, strengthen, harmonise, integrate and publicise all existing laws/regulations, standards and codes of practice with respect to the control and regulation of food safety practices; eliminate areas of duplication/conflict and make them more relevant to the needs of the country and also create the national database needed for future planning;

4. establish a risk-based food control system that will assist in setting appropriate levels of protection for consumers and also prioritise food safety programmes and monitor safety trends in the national food supply.

c. Infrastructure development – Myanmar should focus on developing infrastructure, which includes equipping and maintaining laboratories with enhanced capacity and up-to-date testing facilities.

d. Technical assistance – In Myanmar, technical assistance should focus on:

1. formulating and enforcing food safety standards for imported and locally manufactured food;
2. implementing food safety best practices (labelling, packaging, details, safety and quality marks) by emulating best practices from other ASEAN countries;
3. training staff to implement and enforce food control measures (qualified and certified food inspectors, laboratory technicians);
4. establishing a national-level committee for consumer protection with a sub-committee on food safety and all other relevant areas;
5. developing a consumer protection policy;
6. designing a long-term strategy on consumer education programmes;
7. promoting food safety among cottage industries through a national development scheme.

5.

Conclusion

Food control measures are critical for improving how Myanmar manages food safety, and this is particularly important considering it is a food producing country. As the country prepares for integration into the ASEAN Economic Community by 2015, and in response to global trends in food safety control, Myanmar needs to focus on delivering a multifaceted and multidisciplinary approach that ensures the effective coordination and collaboration of the regulatory bodies, industry, academia, research institutes, professional bodies, consumer associations and the general public. Food safety policy development should be integrated and linked with other policies, such as poverty eradication and agricultural development. With consumers taking an ever-greater interest in food safety issues, their demands are increasing. As such, the Government of Myanmar must begin working now to develop a long-term solution which guarantees the safety and quality of food produced and consumed in Myanmar.

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Appendices

Appendix 1: Research methodology

In order to ensure uniform analysis of aspects related to food safety control measures, the research adopted standardised and identical terms in the design and execution of the research in each country. These terms are generally aligned with the Codex guidelines including:

- **Control measure:** any action and activity that can be used to prevent or eliminate a food safety hazard or reduce it to an acceptable level
- **Food safety control system:** the combination of control measures that, when taken as whole, ensures that food is safe for its intended use
- **Monitoring:** the act of conducting a planned sequence of observations or measurements of control parameters to assess whether a control measure is effective
- **Validation:** obtaining evidence which a control measure or combination of control measures, if properly implemented, is capable of controlling the hazard to achieve a specified outcome
- **Verification:** the application of methods, procedures, tests and other evaluations, in addition to monitoring, to determine whether a control measure is or has been operating as intended

The above measures are considered to be the main components of the research.

Selection of stakeholders

As food safety and food control measures in each country are carried out by different agencies and authorities, the identification and selection of respective stakeholders (to be key informants), coordination of the field visits and round-table discussion (RTD) were carried out with the assistance of country partners, which are local civil society organisations in the country in question. The selected stakeholders representing the various groupings having primary responsibility along the food safety measures value chain. The main groupings of stakeholders are:

- policymakers and implementers: government agencies and authorities (including those involved in public health, food safety, agriculture, fisheries, livestock, standards and accreditation, etc.)
- facilities: food testing laboratories, import checkpoints, food processing, handling and marketing
- food safety interest groups: consumer organisations, NGOs, FAO, WHO, etc.
- the private sector: producers, importers and exporters
- human resources: food safety inspectors, laboratory technicians and food safety experts

The local partner supporting CI in the implementation of the research was the Myanmar Consumers Union (MCU).

Data gathering

This research used a qualitative approach for data gathering and analysis that was ultimately used for inventory and documentation purposes. To this end, survey questionnaires were developed to assist in gathering data and implementing research, which ran as follows:

Secondary data gathering	The desk research involved a study of relevant documents and publications and a literature search of available documents and reports relating to food safety and food control measures. Secondary data was also gathered by the local partner using the Focal Point Questionnaire, which mainly focuses on three key components of the food control system: food legislation; food control management; and information, education and communication. This includes gathering data relating to acts and laws, rules and regulations, codes of conduct, government policies, etc.
Primary data gathering	Data is collected through key informant interviews (KII), field visits and round-table discussions (RTD). This approach involves specific sets of questions designed for specific key informants, sites visited or organisations met in relation to food safety control measures. The key informants are persons in senior positions involved in policy-making or enforcement (from different departments) or individuals who are involved in monitoring, awareness-raising and/or policy advocacy. These individuals were identified in consultation with in-country partner organisations. For KII, open-ended questions were used to seek more detail on the information already gathered in the secondary research. This included, for example, investigating specific details, facts and figures related to food safety relevant to the responsibilities and engagement of the key informants.
Validation	A half-day RTD with participants from selected stakeholder organisations was delivered. The main aim of the RTD event was to share and validate the key findings of the Focal Point Questionnaire, key informant interviews and site visit observations in order to strengthen the validity, accuracy and reliability of data and information collected. The participants included mid-level or junior-level representatives from the same organisations or agencies the team had met during its country visit.
Data analysis and reporting	Using the data collected in the above three stages, cross-verification was used as the principal analysis method for this study and country report, involving: <ul style="list-style-type: none"> • standardised data entry templates, created for data reporting • a standardised PowerPoint template, created for the RTD • a standardised RTD format and procedures

Overview of methodology

Step 1	gather secondary data related to food safety control measures
Step 2	conduct consultations among CI and partners regarding stakeholder identification, consultation, analysis and responsibilities
Step 3	design questionnaires using preliminary and baseline information gathered in Step 1 and the findings from Step 2
Step 4	conduct a pilot study/pre-testing among partners to test the adequacy of the instruments
Step 5	revise questionnaires based on findings from the pilot study and feedback from GIZ to ensure appropriateness in the local context
Step 6	disseminate the Focal Point Questionnaire to country partners, to be completed prior to field visits
Step 7	ask a specific set of questions of the identified key informants during the field visit The questions are selected from the Master Questionnaire (KII), which is then frequently updated and modified during the interview process to allow researchers to probe more deeply.
Step 8	conduct round-table discussions following the completion of key informant interviews to validate and share findings

Sample size

Due to time and budget restrictions, eight key informants were interviewed and three site visits (to laboratories, import/export points, public food preparation sites and markets) were conducted in Myanmar from 25 to 31 May 2013. The RTD was held on 30 May 2013 with 64 participants coming from government departments under a range of ministries; NGOs, civil society organisations and the media. A list of RTD participants is provided in Appendix 4.

Qualitative information obtained from key informant interviews and round-table interviews was used to substantiate or supplement quantitative information obtained from the general survey. The open-ended key informant interviews and round-table discussion served as a sounding board to fill in any information gaps and to check the validity and relevance of the research. The findings of these processes informed the development of this report and set recommendations and a road map of the strategic thrust areas for improving food safety control in Myanmar.

Capacity-building needs and gap analyses

The identification of capacity-building needs and gaps was accomplished by performing a systematic analysis of the information gathered through the secondary and primary research. The information gathered from the above-mentioned analysis was utilised to identify gaps in the existing operating context for food safety control in the country. An index was developed to be used as a checklist for identifying gaps and priorities, and its level was based on analysis of the research and the capacity-building requirements.

Profile of stakeholders

Generally, the stakeholders were identified based on their direct and indirect involvement in food safety, including:

- government entities
- national non-governmental organisations (NGOs) and civil society organisations (CSOs), including consumer associations working on food issues

The eight food-safety-related stakeholders in Myanmar participating in this study can be categorised under four main groups:

- government agencies
- non-governmental organisations
- laboratories
- the private sector

a) Government agencies

- Ministry of National Planning and Economic Development

b) Non-governmental organisations

- Myanmar Consumers Union (MCU)
- Food Security Working Group (FSWG)

c) Laboratories

- Food Industries Development Supporting Laboratory

d) The private sector

- Myanmar Fisheries Federation
- Myanmar Livestock Breeding Federation
- Myanmar Food Processors and Exporters Association
- Union of Myanmar Federation of Chambers of Commerce and Industry (UMFCCI)

Limitations

- As most government departments were being reshuffled and reorganised, the CI team were not able to secure meetings with contacts from the respective departments during the field visit to Myanmar from 25 to 31 May 2013.
- Accessing detailed materials primarily depended on the resources, publications or reports being available online, a situation compounded by the limited availability of these documents in English.
- Complete data on enforcement is also critically lacking in this report due to the lack of participation of enforcement units or departments.

Appendix 2: Field visit and appointments

Date (2013)	Time	Meeting	Remarks
25 May		Arrival of the CI mission team in Yangon and meeting with the Myanmar Consumers Union (MCU)	
26 May	09.00 - 15.00	Meeting with MCU	
27 May	09.00	Myanmar Fisheries Federation (MFF) and Myanmar Livestock Breeding Federation	U Hnin Oo MFF Office
	13.00	Food Industries Development Supporting Laboratory	Dr Aye Kyaw Union of Myanmar Federation of Chambers of Commerce and Industry (UMF-CCI)
28 May	09.00	MCU and Food Security Working Group (FSWG)	Dr Ohmar Khaing FSWG Office Yangon
29 May	16.30	Meeting with Ministry of Planning and Economic Development	Nay Pyi Taw
30 May	09.00	Round-table discussion with a range of stakeholders	Inya Lake Hotel Yangon
31 May		Departure of the CI mission team	

Appendix 3: Roundtable discussion

30 May 2013, Inya Lake Hotel, Yangon

Programme agenda

09.00 – 09.30	Registration
09.30 – 09.40	Welcome by Prof. (Retired) Dr Nu Nu Win Vice-President of the Myanmar Consumers Union (MCU)
09.40 – 10.00	Introduction to Consumers International by Indrani Thuraisingham, Head, Consumers International Office for Asia Pacific and the Middle East
10.00 – 10.30	Tea
10.30 – 11.00	Presentation of assessment findings on food control measures in Myanmar
11.00 – 12.30	Open discussion for a future agenda
12.30 – 12.45	Closing remarks by MCU
Lunch	

Appendix 4: Participants in the roundtable discussion

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