

An Assessment of Food Control System and Development Perspective: The case of Myanmar

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Abstract—Food control measures are critical in fostering food safety management of a nation. However, no academic study has been undertaken to assess the food control system of Myanmar up to now. The objective of this research paper was to assess the food control system with in depth examination of five key components using desktop analysis and short survey from related food safety program organizations including regulators and inspectors. Study showed that the existing food control system is conventional, mainly focusing on primary health care approach while relying on reactive measures. The achievements of food control work have been limited to a certain extent due to insufficient technical capacity that is needed to upgrade staffs, laboratory equipment and technical assistance etc. associated with various sectors. Assessing food control measures is the first step in the integration of food safety management, this paper could assist policy makers in providing information for enhancing the safety and quality of food produced and consumed in Myanmar.

Keywords—Food Control, Food Policy, Legislation, Management

I. INTRODUCTION

FOOD control measure is one of the essential tasks that government has to implement for its own population. As ensuring safe and healthy food is an important precondition of food security [23] both developed and developing countries governments should pay attention to food control measures from controlling point of view. Less frequently voiced, but no less important, is the domestic food safety situation of developing countries due to high exposure level of contaminated foodstuffs than developed countries [3]. On the other hand, government has to consider consumer protection against contaminated or adulterated food as well as fulfilling food sufficiency simultaneously. Food control measures are practically trans-boundary issues and interrelated with health and trade matters.

Globally, increasing consumer awareness and new legislative demands on food production systems have resulted in significant efforts in control measures and assurance systems in different food sectors [24]. At that point the development of food safety standards has reduced the risks in foods thereby often increasing the costs of compliance that sometimes incurred temporary import bans [21]. Moreover, regulatory systems and authorities have been facing new and continuing food safety challenges to address new potential foodborne risks, whilst seeking to improve control of established risks concurrently [27].

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In the case of Myanmar, no study has been undertaken to assess food control system to date. Questions have arisen regarding the challenges of food control¹ perspectives especially hindrances for regulator from controlling perspectives and their recommendations for future food control in Myanmar. It was discussed by [8] how an analysis of the current state of key components of the food control system is required before making necessary improvement and decisions. Moreover, [23] suggested that reviewing and analyzing the current capacity is the first among six steps of need assessment for food safety infrastructure and capacity building. Hence, the objective of this research paper was to assess the five key components of food control system i.e. food legislation, food control management, inspection services, laboratory services and finally, information, education, communication and training, that have been implemented in Myanmar.

II. METHODOLOGY

This research study employed desktop analysis and short survey. Desktop analysis was done using extensive literature review from available documents and reports from related services and organizations of food safety program of Myanmar. This method was applied to three key components of food control system: food legislation; food control management; and information, education, communication and training.

The short survey was applied to the last three components of food control system: inspection services, laboratory services and information, education, communication and training. The survey was conducted in summer 2012 in Yangon, the former capital of Myanmar which is the main city for export and import of food and agricultural products. Regulators and inspectors from organizations and inspection and laboratory services such as food and drug administration were interviewed using semi-structured questionnaire including views, opinions and perceptions on the food safety control issues in Myanmar to obtain an in depth knowledge to support the textual analysis.

The paper is presented in five sections including abstract: section 3 describes and discusses from a critical perspective the five key components of food control system of Myanmar along with food policy issues, their effectiveness and achievement of policy objectives. The last section provides conclusion and recommendations.

¹Food control encompasses a number of activities to provide consumer protection and ensure that all foods provided for human consumption are safe, wholesome, conform to safety and quality requirements, and are honestly and accurately labeled as prescribed by law [5]

III. RESULTS AND DISCUSSION

A. Food Legislation

The optimum type of food control system for one country may not be appropriate for another. However all food control systems should be developed and operated in accordance with certain fundamental principles including a food chain approach, risk analysis, transparency and the involvement of all the concerned stakeholders from farm to table [6]. Moreover, achieving food safety is a shared responsibility and involves different types of stakeholders – including government², the food industry³, consumers⁴ and their organizations, academic and scientific institutions, etc. [6].

Protecting the consumer's health, increasing economic viability, harmonizing well-being and engendering fair trade on foods within and between nations are the main aims of food regulation that assure a safe supply of commodities and aspire to eliminate fraudulent practices [2].

1. Law and Act

In Myanmar, the first Food and Drug Act was enacted in 1928. In 1972, the Public Health Law was promulgated and successive attempts had been made to strengthen the food control work since then. The National Drug Law in 1992 and National Food Law (NFL) -1997 were promulgated in line with WHO model food laws and notifications are under process [9]. There are four aims in the NFL: to enable the public to consume food of genuine quality, free from danger and hygienic, to prevent the public from consuming food that may cause danger or are injurious to health, to supervise production of controlled food systematically and to control and regulate the production, import, export, storage, distribution and sale of food systematically [22].

In the NFL, all foods need product recommendation from the Food and Drug Administration (FDA), Department of Health for importation and exportation. Consignments arriving at the Myanmar port of entry are allowed to be distributed only after being assessed and issued with a health certificate by the Department of Health [19].

2. Policy and Plan

Effective food control systems require policy and operational coordination at the national level [26]. Myanmar has established the National Health Committee (NHC), the highest level policy making body for health matters, which has laid down the National Health Policy (NHP).

² Government agencies (at central and lower levels) are responsible for establishing and managing an enabling institutional, policy and regulatory framework for food safety, and carrying out food control activities that protect consumers from risks arising from unsafe food and fraudulent practices [6]. The capacity of a national food control system relates to its ability to perform appropriate functions effectively, efficiently and sustainably in order to provide safe and quality food for domestic consumption and export [5].

³ Food producers, processors, handlers, manufacturers, traders, retailers and caterers (hereafter referred to as the food industry) have the primary responsibility for delivering safe food to consumers. This includes responsibility for developing and managing systems that ensure that the food supplied and/or served is safe and complies with official food safety requirements [6].

⁴ Consumers and their organizations are responsible for ensuring that food is handled, stored and prepared in accordance with good hygienic practices (GHPs), and for requesting appropriate standards of food safety [6].

National Health Plan (1996-2001) was drawn and implemented using the Primary Health Care approach, under the guidance of NHC and the objectives of the National Health Authority. Twelve broad programs have been implemented in NHP and FDA is one of these [9]. NFL is designed to protect the consumers in Myanmar, even though it has no separate defined and published policy on food safety as part of food policy.

3. Board of Authority

In accordance with the provision of National Drug Law, the formation of the Myanmar Food & Drug Board of Authority (MFDBA) was possible. The MFDBA, chaired by the Minister of Health, is vested with power by NFL to lay down policy, guidance on production, distribution, importation, exportation, quality assurance, standard setting, classifying controlled food, food additives and substandard foods, labeling and advertisement. MFDBA members come from related departments as well as professionals from relevant fields of specialties. It is also empowered to take action according to the NFL on those who do not comply with the regulations [9].

4. Supervisory Committee

According to the provisions of the National Drug Law, the restructuring of the Food and Drug Supervisory Committee (FDSC) at various levels such as central, state and division, district and township levels were done in the later part of 1992 to ensure efficient and uniform control throughout Myanmar. At the central level, the committee members are the Director General of the Ministry of Health as a chairman, Director of FDA as the secretary and representatives from City Development Committee, Myanmar police force, and Department of General Administration, Department of Development Affairs and Department of Livestock as members. Directives Sub-committee of FDSC has been formed since 2002 [9].

5. Advisory Committee

Drug Advisory Committee -1993, 2002 and Food Advisory Committee-2002, Food Technical Affairs Sub-committee-2002 and Food Orders and Directives Sub-committee-2002 have been formed accordingly.

6. Food and Drug Administration (FDA)

In accordance with the provision of the National Drug Law, the Food & Drug Division has been upgraded in to a Department under the Director as the Food and Drug Administration (FDA) since 1995. FDA is the contact point for Codex Alimentarius Commission (CAC) and it refers Codex Alimentarius Commission (CAC) as working materials, for the interim measures [9]. FDA has two divisions; food division and drug division. Each division has enforcement & laboratory units. Food enforcement unit comprises of regulatory affairs, inspection, training and advisory services. Food laboratory unit has food and water microbiological and chemical laboratories. Expansion of FDA in Mandalay (the second largest city in Myanmar) has started functioning since the year 2000, in accordance with the National Health Plan (1996-2001)'s objectives.

Establishing and updating food legislation is a necessary first step in establishing an effective food safety system [23]. According to in depth interview with key informant (regulator), FDA has already proposed recently to upgrade existing NFL mainly in two issues such as (1) to increase the amount of fines mentioned in section 31 of Chapter XI: Offences and penalties [22] from 30,000 kyats⁵ to 300,000 kyats to be appropriate with the current situation and (2) to change the terminology of some newly named department (new terms are due to some transformation and amalgamation recently at the government level) to be coherent with this transformation[20]. This upgrade will be carried out with the technical advices and cooperation with the Attorney General of Myanmar and other related organizations, when the proposal is approved.

B. Food Control Management

Sporadic food control in Myanmar had been transformed since 1960s by the health department responsible for overall food safety. According to [9], The Department of Health under the Ministry of Health is responsible not only for overall health care of the populace and but also for food and drug safety and control in Myanmar.

FDA has been upgraded since 1995 which comprises of food division and drug division, as aforementioned. In this paper, emphasis will be paid more on food sector rather than drug sector even though drug sector is equally important as food sector for the population. FDA's food control measures can be generally divided into three parts depending on food sources (1) food importation (2) food exportation and (3) domestic food production. Food imported and food to be exported should be compliant in accordance with National Food Law and in line with international recognized procedures [19].

As for imported food, the FDA not only assesses the documents related to the status of Good Hygienic Practice of manufacturing plants from abroad (such as factory registration, product specification, certificate of analysis etc.), but also analyzes imported food to check whether it complies with specification or international standards. Food imported from border areas are not under strict control due to limited capacity as well as smuggling. This illegal importing has been creating a number of problems in terms of quality and price. Some domestically produced food (for example, small scale family business for packed-snack food) cannot compete with these illegally imported ready-made food snacks, entered through border route often with foreign language labels.

For foods to be exported, FDA also tries to fulfill the requirement of the importing country's requests (such as issuing Export Health certificate fit for human consumption, certificate of analysis, recommendation for the status of manufacturing factory and so on). Apart from FDA, Department of Agriculture, Department of Directorate of Trade and Department of Customs are also responsible for controlling import and export food.

As regard with the Ministry of Commerce, it also supervises the issuance of export and import licenses by checking the recommendations from relevant ministries, standardization, price and trademark for all imported and exported products [16]. As for locally produced food, it could be divided into three major groups depending on the size of business (1) food produced at manufacturing food factory (2) food produced at small and medium enterprises SMEs and (3) food produced at family business level in Myanmar. Government enforces to practice Good Manufacturing Practices (GMPs) mandatory in food processing industries in Myanmar; hence FDA encourages all sectors of food manufacturers to implement Hazard Analysis Critical Control Point (HACCP) concept and risk analysis approach for food control officers [9]. FDA issues GMP recommendations for manufacturing food factory that are valid for 2 years, conducts 3 times regular inspection per year as well as detection of microbiological and chemical lab tests for safety and quality of food produced at these factories following international standard which means CODEX [20]. Another concerned licensing authority for establishing food manufacturing factory is the Directorate of Industrial Coordination & Inspection of the Ministry of Industry in accordance with the Industrial Law [9].

With one year validity, Good Hygienic Practices GHPs recommendation by FDA is especially for SMEs rather than GMPs. Increasingly, along with the development of super markets in cities from 2006 years, more and more SMEs are applying for GHPs to get more profitable market access and reasonable price whilst providing quality assurance. FDA approval becomes necessary due to demands of supermarkets that create positive competition. Therefore it leads to a shift to process-based food control rather than end products testing. On the other hand, according to a report of the Ministry of Commerce, some local business industry demanded getting quick recommendation of FDA approval for their food testing [13]. As Myanmar is in its' transformation period and likely to have boom business in the near future, FDA needs to take measures in capacity building matters to keep abreast with the changing situation of the country. Food produced by family business is still exempted for applying FDA recommendation as their businesses are rather small and cannot adapt that progress yet, so far. For controlling street foods, restaurants and meat products, the issuance of health certificate to food stall, recommendation for licensing of food stall, medical examination for food handlers, training on food safety, food hygiene and safety of food manufacturers and food stalls, granting permission for slaughtering house and sale of meat are supervised by health department of development affairs of city development committee, according to 1993- Development Committee Law [18]. City Development Committees (CDCs), one of the committees of Food and Drug Supervisory Committee is specifically concerned with street food and food service establishments. CDCs have licensing authority within their jurisdiction [9]. Regarding agri-products control measures, chemical residues analysis, assessment of toxicity of registered pesticides, monitoring of residual levels of pesticides with ASEAN harmonized MRLs are managed by plan protection division of Myanmar agriculture services (MAS) Ministry of Agriculture and Irrigation (MOAI) in accordance with the 1990 Pesticide Law [18].

⁵The currency of Myanmar, the exchange rate is about 810 kyats against one US dollar.

Plant Protection Division (PP) of (MAS) is legally responsible to issue Phytosanitary Certificates and Import Certificates, according to the Plant Pest Quarantine Laws enacted in 1993 [25]. According to [20], unacceptable levels of plant growth regulator residues in betel leaves were detected during post market surveillances at domestic market. She emphasized that FDA's food control functions have a considerable number of difficulties due to insufficient facilities and equipment as well as apparatus for testing pesticide residues. Only PP-MAS has detection machines for such analysis. Nevertheless, PP-MAS mentioned that financial and infrastructure limitations are constraints for implementation and further development of existing international and regional standards in phytosanitary measures⁶[15].

In 2010, a post-market survey on food such as soft drink, pickled tea leaves, fish paste, chili powder, etc. was done. It was reported that one fish paste sample out of 147, ten chilli powder samples out of 225, nine chili sauces out of 72 were found containing unpermitted colour dye and were publicized in newspapers [17]. Food control system has been already established systematically in Myanmar[20], but achievements on food control work have been limited to certain extent for various reasons [9]. According to interview with [20] that capacity building is needed to upgrade in terms of number i.e. qualified staffs and laboratory equipment as well as in terms of quality i.e. technical assistance to be able to cover the scope⁷ of control measures. Since existing capacity is not sufficient, expansion of number of qualified staffs has already been proposed to official concerned[20].

Being the food control authority of all domestically produced food and imported food, FDA (Myanmar) realized that risk analysis approach is of their concern [9]. Myanmar, one of the south East Asia developing countries, has the limited functional capacity as the main constraints [9] though trying its best with the existing capacity in food control measures [20].

C. Inspection Services

Food inspection⁸ services can be operated by government agencies, as well as independent organizations that have been officially recognized by national authorities [5].

The administration and implementation of food laws require a qualified, trained, efficient and honest food inspection service[4]. A shared responsibility with public and private inspection services is found significantly in this component among five key components in food control system of Myanmar.

⁶ For further detail information concerning with SPS measures of PP –MAS Myanmar, please see the following link:

(<http://www.fao.org/docrep/010/ag123e/AG123E13.htm>)

⁷ The Scope of food control systems should cover all food produced, processed and marketed within the country, including imported food. Such systems should have a statutory basis and be mandatory in nature[4]

⁸ Food inspection is the examination of food or systems for the control of food, raw materials, processing and distribution, including in-process and finished product testing, in order to verify that they conform to requirements[7][5] it protects consumers by ensuring that domestically-produced or imported food is handled, stored, manufactured, processed, transported, prepared, served and sold in accordance with the requirements of national laws and regulations [6].

Regarding FDA inspection, insufficient capacity is the main hindrance in implementing food control work [20]. As mentioned above, expansion of number of qualified staffs has already been proposed to officials concerned from the current strength of 100 to 2000 staffs to be able to cover the scope of control measures also at the trade points of border routes of Myanmar. In the case of Myanmar, FDA inspection as part of food control measures is generally focusing on two types of inspections such as (1) inspection for food factory (for conformity assessment) and (2) pre and post market surveillances for food marketed (either imported or locally produced food) at the domestic market. Chemical dyed foods such as imported edible oil from border routes, locally produced ready-made fish paste, pickled tea leaves for being contaminated with Auramine O, chili powder as being contaminated with chemical dye Rhodamine B red color, were some sort of banned food after searching in the market for confiscation by food authority during post market surveillance. In short, FDA's inspection could be seen more specifically in food factory inspection and pre & post market surveillance for some varieties of food items in domestic market rather than covering the entire food chain.

Even though the final decision of whether food should be distributed or not, is based on the result of FDA's health certificate, the role of public and private inspection organizations is prominent due to buyers' claim with designated inspection organization depending on importing country. To fulfill the requirement of food control measures together with providing shared responsibility, one public and some private authorized inspection and certification organizations in Myanmar are involved.

Sampling of food for FDA's fit for consumption certificate is occasionally collected by Myanmar Inspection and Testing Service MITS: a public inspection organization. It is independent and officially recognized by the national authority and established under Notification No.29/90, on 10th October 1990 of the Ministry of Trade (that is now Ministry of Commerce) and also affiliated as a Limited under Myanmar Agricultural Produce Trading, Ministry of Commerce [14]. In the field of export and import sector, these public and private inspection teams can be considered as the main player of inspection services. Responses from three main inspection teams were collected to assess the perception of inspectors in fostering the current food control measures. Competent food inspectors⁹ who are adequately trained and equipped for food inspection are vital in ensuring consistent, transparent, and effective food inspection[23].

According to the survey, newly appointed inspectors have to work together with experienced inspectors to learn and share experience during inspection procedures. As experiences are important, training is also one of the first priorities for new inspector. Training for inspectors can be classified into three categories such as in-house training, other departments' training, and training conducted by foreign groups.

⁹ The food inspector is the key functionary who has day-to-day contact with the food industry, trade and often the public[4].

Almost all the inspectors had attended in-house training, more than half of them attended training conducted by other departments and only very few attended the trainings conducted by foreigners.

According to the survey, it was found that one third of respondents was responsible for export sector and only one fifth was for import whereas nearly half of them are responsible for both sectors. All of them used both quantity and quality parameters in inspection.

Regarding inspector perception towards food control inspection, more than half of respondents had the perception that the scope of the existing method used in inspection is enough. One fourth of inspectors responded that they were not sure whether the scope is enough. Only very few replied that they didn't think that the scope is enough.

Finally, according to the survey, the majority of respondents agreed that the method used in inspection is the best method. This type of response can be also seen repeatedly, showing that most of inspectors agreed that the method used for inspection should be acceptable for consumer protection and smooth of trade flow.

D. Laboratory Services

Food Quality Control Laboratory¹⁰ (FQCL) was established, since 1970s as a division under the National Health Laboratory of the Department of Health under the Ministry of Health [19]. Adequate laboratory infrastructure such as food control laboratories, trained analysts, and the implementation of the Quality Assurance System that meets international standards, is required to support the monitoring, surveillance and enforcement activities of food control system[23]. According to the interview with regulator, FDA's laboratory units are needed to expand necessary infrastructure urgently to meet the need of current situation. Up to now, there are 2 FDAs in Myanmar (one in Yangon and one in Mandalay) and therefore it can be regarded as small sized agencies if balancing with the scope of its function as the national food control authority. It was emphasized responsively by regulator that the expansion of capacity and infrastructure are the top priority for enhancing food control measures.

Referencing national food safety framework, FDA of the Ministry of Health (for routine analysis; compositional analysis; food contaminants analysis), PP of the Ministry of Agriculture and Irrigation (for chemical residue analysis : pesticide residue), Livestock Breeding and Veterinary Department (for feed analysis) and fishery department of the Ministry of Livestock and Fishery (for quality control analysis: pathogens, heavy metal, parasites, antibiotic residue, sulphadioxide ,etc.) are the concerned laboratories of food control [5].

¹⁰ Food control laboratories are an essential part of a national food control system. Analysis of food samples for physical, chemical and microbiological contamination is important to verify the safety and quality of food (including compositional characteristics, nutrition values, adulteration, presence of contaminants, etc.) that is produced domestically, imported and/or exported, and to enable appropriate action to be taken to protect consumers whenever necessary [5].

Other agencies and department such as Myanmar Science & Technology Research Department, Post-Harvest Technology Application Center (PTAC) of Myanmar Agriculture Produce Trading also play a part in laboratory analyses that are involved in food safety program of Myanmar[9]. Apart from government laboratories, there are also a considerable number of non-public food analysis laboratories. Food Industries Development Supporting Laboratory (FIDSL) run by Myanmar Agro-based Food Processors and Exporters Association (MAFPEA) is one of the international standard food laboratories that aims to serve as a bridge between government laboratories and the private sectors, for the support of production of safe food locally while providing safety recommendations of goods to be exported and imported [12].

E. Information, Education and Communication (IEC)

Information, education and communication¹¹ (IEC) can be used by governments to educate consumers about food safety and quality, and encourage food industry to adopt good agricultural, manufacturing, hygiene and handling practices [5]. Sharing information, education, and advice among stakeholders across the farm-to-table continuum is essential to enable food safety programs to reduce the incidence of food-borne disease [23]. Food safety awareness promotion for food producers by using IEC materials is one of the priorities of FDA so as to reduce food safety risks effectively by preventing contamination throughout the food production chain. To carry out these IEC activities of food safety, FDA is working together with other department such as agriculture, fishery, veterinary, for safety control measures [20]. The FDA takes part actively in international, regional as well as local affairs by attending ongoing trainings, standardization meetings, food safety and quality matters to keep up with advance technology and to work with the international organizations for better cooperation[20].

The FDA has been conducting trainings as food safety education program such as GMP trainings for factory managers, training on food safety for food handlers, restaurant managers and processors to increase the awareness, training on food hygiene and risk, training on food analysis (with test-kits) for food analysts especially for border point inspection. Training conducted by FDA shows the clear IEC channels for the food industry. As for the awareness promotion among consumers, programs such as proper hand washing, adequate cooking, and avoiding cross-contamination in food preparation are being broadcasted, from time to time, through Government TV channel with the cooperation of Ministry of Information and Ministry of Health. Thus, IEC channel for consumers provided by food authority is not more than generalized so far but weak in participatory approach, even though the consumer is the beneficiary group for achieving food safety.

¹¹ Information, education and communication (IEC) plays an important role in an effective food control system by increasing awareness and knowledge about food safety and quality issues among consumers and their organizations, food producers, processors, traders, food enterprises, industry associations and others, and empowering them to enhance food safety and quality for themselves, or for those who consume the food they produce and/or market [5].

This is due to insufficient capacity and infrastructures of related organizations. Even though FDA sometimes released the list of banned products (mostly targeting on traditional medicine and tea-leaves) in state-owned newspapers, some local consumers started to raise some questions about the safety and quality of other food items sold in local market that are still unchecked yet [11]. Regarding education program in the agriculture sector, GAP training conducted by Myanmar Agriculture Service -MAS for farmer, helps to reduce the use of agrochemicals for improvement of food safety and quality of agricultural products.

There is no consumer protection act or law and no consumer association in Myanmar as yet [28]. To address this matter, the Ministry of Commerce, being the official focal point of ASEAN Committee on consumer protection (ACCP), is engaging since 2007 in consumer protection activities such as (1) proposing main Consumer Protection Law, (2) preparing to carry out consumer redress scheme and (3) promotion of awareness of consumers. It proposed Consumer Protection Law to the attorney general of Myanmar to get the technical advices and cooperation. It also takes part in the promotion of awareness of consumer especially concerning with consumer protection affairs by conducting seminars, discussions with locals throughout the country [13].

IV. CONCLUSION

Food control system had been established systematically since the 1990s. Nevertheless, the implementation of effective food control measures is still a demanding issue for a developing country like Myanmar. As insufficient capacity and infrastructure of the related organizations are the main hindrance in implementing food control works, these essential infrastructures clearly need to be upgraded in terms of number i.e. qualified staffs and laboratory equipment as well as in terms of quality i.e. technical assistance to be able to cover the scope of control measures. Identification by assessing the food control measures is the first step in integration of food safety management, this paper could assist policy makers in providing information so as to enhance the safety and quality of food produced and consumed in Myanmar.

Food control measures are critical in fostering food safety management of a nation especially for a food producing country. According to [1], rapid growth in agriculture has opened pathways out of poverty for farming households in Vietnam. Consequently, price-based demand for food would become hygiene-based demand as income rises along with agricultural development [10]. Likewise, it was suggested by [23] that governments' comprehensive national food safety policy and plan of action should not only involve all relevant stakeholders but also that food safety policy should be integrated and link with other policies such as poverty eradication and agricultural development. As food safety starts from farm, the development of agricultural sector can bring better opportunity for farmers while producing safer food. Demand of consumer for food safety issue is likely to be higher in the future in terms of better labeling by food producers.

Thus, FDA and other related government agencies should prepare well aiming for the long term solution for food safety and quality of food produced in Myanmar.

Furthermore, the level of existing food control system should be paid more attention on effectiveness while covering overall food sectors.

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