

# **A COMPARATIVE STUDY OF LEGAL MEASURES ON MEAT SAFETY IN THAILAND, THE UNITED STATES, AND SINGAPORE\***

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## **ABSTRACT**

Meat safety control in Thailand has been faced with complexities in regards to producer's capacity and limitations, consumer's demand and food culture, and requirements by international food regulations. In an attempt to seek for appropriate measures to cope with such complexities, a problem-based comparative analysis was conducted on legal measures on meat safety of three countries; namely, Thailand, the United States, and Singapore. Implications for improvements of Thai laws and regulations were derived respectively, focusing on domestic supply chain of raw meat, from primary production to slaughter.

Overall, the legal measures for meat safety of the U.S. and Singapore share the similar structure in that both countries regulate comprehensive as well as specific laws addressing the meat safety control. Moreover, they are based on the same concept that adulterated meat shall be strictly prevented from entering to the human consumption chain, and thus a holistic approach is essential throughout the meat supply chain. In details, however, the two countries place different emphases on legal measures in the aspects of allocation of authority, scope of laws, and the cooperation among concerned agencies. As for Thailand, remarkable efforts in advancing laws and regulations on meat safety have been noted in recent years. Nonetheless, there remains some room for improvements, particularly with regards to quality control for general domestic consumers. Foremost is the problem of the legal structure itself, in that laws governing meat safety are fragmented as several specific laws have been enacted, resulting in problematic implementations of regulations along the meat supply chain. On details, problems of the existing provisions were identified. In accordance with the findings, enhancement of provisions under the existing laws governing primary production and slaughter was proposed so that to handle problematic issues at hand. For the benefit in the long run, re-structuring of the meat safety laws governing the entire meat supply chain was also proposed under appropriate circumstances.

**Keywords:** Food Safety, Food Safety Laws, Meat Safety Control

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\* The article is summarized and rearranged from the thesis 'A Comparative Study of Legal Measures on Meat safety in Thailand, The United States, and Singapore' Master of Laws Program in Business Laws (English Program), Faculty of Law, Thammasat University, 2016).

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#### บทคัดย่อ

การควบคุมความปลอดภัยในเนื้อสัตว์ของประเทศไทย เผชิญปัญหาซับซ้อนที่เกี่ยวข้องกับศักยภาพและข้อจำกัดของผู้ผลิต วัฒนธรรมของผู้บริโภค และกฎระเบียบสากลด้านความปลอดภัยของอาหาร เพื่อค้นหามาตรการที่เหมาะสมในการรับมือกับปัญหาดังกล่าว งานวิจัยนี้จึงได้ศึกษาเปรียบเทียบมาตรการทางกฎหมายในการควบคุมความปลอดภัยในเนื้อสัตว์ของประเทศไทย สหรัฐอเมริกา และสิงคโปร์ และนำข้อมูลมาปรับใช้เพื่อการปรับปรุงมาตรการทางกฎหมายของไทย โดยเน้นปัญหาเฉพาะห่วงโซ่การผลิตเนื้อสัตว์บริโภคสดภายในประเทศ ตั้งแต่กระบวนการผลิตขั้นปฐมภูมิจนถึงกระบวนการฆ่าชำแหละ

โดยภาพรวม มาตรการทางกฎหมายเพื่อความปลอดภัยในเนื้อสัตว์ของสหรัฐอเมริกาและสิงคโปร์มีลักษณะร่วมกันคือ มีกฎหมายที่ครอบคลุมและจำเพาะสำหรับควบคุมคุณภาพเนื้อสัตว์ นอกจากนี้ทั้งสองประเทศยังยึดถือหลักการเคร่งครัดในการป้องกันไม่ให้เนื้อสัตว์ปนเปื้อนได้เข้าสู่ห่วงโซ่อาหาร โดยการควบคุมแบบองค์รวมตลอดเส้นทางของห่วงโซ่การผลิตจนถึงผู้บริโภค อย่างไรก็ตาม มาตรการของทั้งสองประเทศมีความแตกต่างในด้าน การจัดสรรอำนาจ ขอบเขตของกฎหมาย และความร่วมมือระหว่างหน่วยงาน สำหรับประเทศไทย แม้จะมีการตราและปรับปรุงกฎหมายอย่างต่อเนื่อง แต่พบว่ายังคงมีจุดอ่อนหลายประการ โดยเฉพาะในด้านที่เกี่ยวข้องกับการควบคุมคุณภาพเนื้อสัตว์เพื่อผู้บริโภคทั่วไปในประเทศ เบื้องแรก คือ ปัญหาด้านระบบหรือโครงสร้างของกฎหมาย ที่มีกฎหมายเกี่ยวข้องหลายฉบับที่จำเพาะและแยกส่วน ไม่เอื้อต่อการควบคุมคุณภาพตลอดห่วงโซ่การผลิต ต่างจากที่พบในประเทศสหรัฐอเมริกาและสิงคโปร์ ในส่วนรายละเอียดของบทบัญญัติ พบปัญหาบางประการทั้งการควบคุมคุณภาพการผลิตขั้นปฐมภูมิและการฆ่าชำแหละ ผู้วิจัยได้ให้ข้อเสนอแนะเพื่อการปรับปรุงบทบัญญัติตามกฎหมายปัจจุบันให้มีประสิทธิภาพมากขึ้น รวมถึงข้อเสนอเพื่อการปฏิรูประบบกฎหมายด้านการควบคุมความปลอดภัยในเนื้อสัตว์ที่เชื่อมโยงตลอดห่วงโซ่ของการผลิตเนื้อสัตว์ ทั้งนี้ภายใต้เงื่อนไขที่เหมาะสม

**คำสำคัญ:** ความปลอดภัยในอาหาร, กฎหมายด้านความปลอดภัยในอาหาร, การควบคุมความปลอดภัยในเนื้อสัตว์

## Introduction

Food safety is vital to human nutrition and food security, and is a critical component for sustainable development. Food products of animal origin are a source of foodborne diseases (FBD) which is the important cause of morbidity and mortality in human worldwide.<sup>1</sup> For meat products, risks in food safety can occur at all of the elements in the meat supply chain, from primary production to slaughter, processing, and product distribution.<sup>2</sup>

Meat is considered significant agricultural commodity in Thailand, especially pork which has exhibited a continuous growth rate in production, domestic consumption and export.<sup>3</sup> Along with such growing trend, there have been efforts in uplifting the production quality in the meat supply chain, but with emphasis tends to place more on quality assurance for export. For domestic consumption, meat safety remains problematic as legal provisions and enforcements are not adequately circumspect. It has been commonly observed in the domestic market that premium meat products from large suppliers normally meet safety standards, whereas products from small and medium suppliers are deemed to be risk-prone in food safety<sup>4</sup>. As meat products with questionable safety are available in common markets, the majority of the Thai consumers are thus at risk in their daily consumption of meat.

Effective legal measure is fundamental to the success in achieving food safety for Thai people, taking into account the balance of the benefits for domestic consumers at all levels. With regards to meat products, there are several specific as well as related laws governing meat safety, with authorities delegated to various agencies at national and provincial levels. Previous studies have pinpointed specific problems of certain legislations and on particular meat categories, but a broader perspective has not been approached. This article attempts to examine more holistically the existing laws and regulations on meat safety in Thailand in comparison to selected foreign countries. The comparative analysis helps to reveal lessons learned on the legal approaches of the three countries. Specifically, the study seeks to identify legal weak points as well as the problems involved in the production chain of raw meat. The information yielded from this study will be helpful for legal measure enhancement on meat safety, particularly for domestic consumption.

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<sup>1</sup> The World Organization for Animal Health (OIE), 'Animal Production Food Safety'. <[www.oie.int/en/food-safety/achievements-to-date](http://www.oie.int/en/food-safety/achievements-to-date)> accessed 12 January 2017.

<sup>2</sup> John N. Sofos, 'Meat and Meat Product' in Yamine Motarjemi and Huub Lelieveld (eds), *Food Safety Management: A Practical Guide for the Food Industry* (Elsevier 2014).

<sup>3</sup> สำนักงานเศรษฐกิจการเกษตร, สถานการณ์สินค้าเกษตรที่สำคัญและแนวโน้ม ปี 2558 (Office of Agricultural Economics, Thailand, *Status and Trends of Significant Agricultural Commodities in 2015*). (Ministry of Agriculture 2014).

<sup>4</sup> Interview with Chainarong Kantawanich (ชัชวรงค์ กันธวานิช), specialist on meat science (Bangkok, 15 January 2015).

## **Status and Trends of Food Safety Laws**

Global awareness on food safety in the 21<sup>st</sup> century has stimulated rigorous advancements in scientific control as well as legal measures among countries all over the world. Amid such legal proliferation, food safety laws have seen varied among countries in regards to legal structure as well as content due to the differences in the food culture as well as the socio-economic background of each country. Analysis of food laws from different countries worldwide revealed problems and issues in the aspects of food law quality, general legislation, and food safety authorities<sup>5</sup>

Regardless of variations, food laws must be modernized to protect the food supply, and at the same time enable the food industry and a government's approval agencies the flexibility to apply innovations and new technology. At present, strategies to ensure food safety place more emphasis on *preventive measures* or precautionary principle implemented throughout food supply chain, and moving from sectorial approach to *integrated* or *holistic approach*.<sup>6</sup>

As for **meat safety control**, legal approaches are also found varied among countries. In the countries with powerful food safety legislation, meat safety is controlled by a specific law which is comprehensive on meat commodity, governing the entire meat supply chain, from the production, slaughtering, processing, and selling of meat and meat products. In some countries, laws are created for more specific groups of meat such as meat, poultry and egg, and fish with an aim to regulate food safety of each agricultural commodity in a holistic manner. In contrast, other countries with younger history of food safety legislation tend to treat the meat safety issue in isolated laws and regulation.

## **International Standards on Meat Safety**

The recent decades have been the period of initiative undertakings on design and establishment of international agreements on food safety regulations, based on scientific concepts and methodology of food safety control. Reviewed herewith are three sets of generally accepted standards, rules, and guidelines pertaining to meat safety control.

### **Codex Alimentarius's Code of Hygienic Practice for Meat**

*Codex Alimentarius* is a compilation of food safety standards that have been developed and adopted by the Codex Alimentarius Commission (CAC) established in 1963

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<sup>5</sup> Bernd M.J. van de Meulen, 'International Food Law' in Christine E. Boisrobert (ed), *Ensuring Global Food Safety: Exploring Global Harmonization* (Elsevier 2010).

<sup>6</sup> Europe-ACP Liaison Committee (COLEACP), 'EDES Handbook on Basic Food Safety Concepts' <<http://edes.coleacp.org/en/edes/page/20342-publications>> accessed March 10, 2015.

with financial assistance by FAO and WHO.<sup>7</sup> The Codex Alimentarius's Code is recognized worldwide as an important reference on food safety.

As the production chain of meat involves particularly details different from other kinds of food, the Codex' Code provides a **Code of Hygienic Practice for Meat** (CAC/RCP 58-2005) as a specific guideline for legislation on meat hygiene of each state.<sup>8</sup> This Code recommends hygienic practices for meat in the whole production chain as supplementary provisions to the General Principles of Food Hygiene. There are various animals producing meat covered by this Code, but not including marine animals. In addition to 'the Code', there are some recommended standards in particular aspects related with meat hygiene, such as MRLs of veterinary drug residues and Codex's Code on Good Animal Feeding, among others.

### **World Organization for Animal Health (OIE)'s Guide**

OIE is the intergovernmental organization responsible for improving animal health worldwide. It is committed to provide a better guarantee of food of animal origin and to promote animal welfare through a science-based approach, and is recognized as a reference organization by the World Trade Organization (WTO).<sup>9</sup>

OIE's international standards on animal health and welfare are prepared and updated by recognized scientific experts and are democratically adopted at annual General Sessions of the World Assembly of Delegates of the OIE. These standards are designed to prevent and control animal diseases, including zoonoses, ensure the sanitary safety of world trade in terrestrial and aquatic animals and animal products, and improve animal welfare.<sup>10</sup> The OIE focuses its guidelines and recommendations on the aspect of animal health and welfare, which mostly relates to primary production of meat. The associated recommendations are the *Guide to Good Farming Practices for Animal Production Food Safety* and the *Terrestrial Animal Health Code*. The *guide* is concerned with animal husbandry management in farms with regards to food safety perspective<sup>11</sup>, whereas the *Terrestrial Code* covers principles and recommendations on the role of veterinary service, the

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<sup>7</sup> World Trade Organization (WTO), 'The WTO and the FAO/WHO Codex Alimentarius' <[https://www.wto.org/english/thewto\\_e/coher\\_e/wto\\_codex\\_e.htm](https://www.wto.org/english/thewto_e/coher_e/wto_codex_e.htm)> accessed 15 February 2015.

<sup>8</sup> Codex Alimentarius Commission (CAC), *Code of Hygienic Practice for Meat (CAC/RCP 58-2005)*, Sec.3.

<sup>9</sup> The World Organization for Animal Health (OIE), 'Our Mission' <<http://www.oie.int/en/about-us/our-missions>> accessed 12 January 2017.

<sup>10</sup> Ibid.

<sup>11</sup> OIE, 'Guide to Good Farming Practices for Animal Production Food Safety' <[http://www.oie.int/fileadmin/Home/eng/Food\\_Safety/docs/pdf/](http://www.oie.int/fileadmin/Home/eng/Food_Safety/docs/pdf/)> accessed 12 January 2017.

approach of animals handling and health surveillance in farming, trading, and slaughter process.

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### **EU's Rules on Meat Safety**

Development of the European Union (EU) food laws has been shaped by a number of food crises, as evidenced in the case of the BSE (*mad cow disease*) crisis during 1980s-2003 which lead to a major reform of the EU food safety laws.<sup>13</sup> The European Commission issued a *Green Paper* in 1997, stating that “the current food legislation fell short of meeting the needs of consumers, producers, and manufacturers of food products”.<sup>14</sup> Soon afterwards, in 2000, the EU Commission's *White Paper on Food Safety* was published. In this White Paper, a new legal framework was proposed in order to establish a high level of consumer health protection.<sup>15</sup>

The White Paper provided the ground for the three Hygiene Regulations known as the *Hygiene Package* that deals with all foods and covers the entire food chain.<sup>16</sup> Among the three regulations set forth, *Regulation (EC) No 854/2004* provides specific rules for the organization of official controls on products of animal origin intended for human consumption. The Hygiene Package also sought to streamline food hygiene rules along the lines of a risk-based approach and embed a stronger emphasis on flexibility in the adaptation of rules to different contexts.<sup>17</sup>

### **Comparative Legal Measures on Meat safety in Thailand, the United States and Singapore**

The United States and Singapore are case studies of countries with powerful food safety measures, but having distinctively different contexts. The United States has a

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<sup>12</sup> OIE, ‘Terrestrial Animal Health Code’ <<https://www.oie.int/doc/ged/d10905.pdf>> accessed 12 January 2017.

<sup>13</sup> John D.G. McEvoy, ‘Emerging food safety issues: An EU perspective’ (2016) 8 Drug Testing and Analysis 511.

<sup>14</sup> Emilie H. Leibovitch, ‘Food Safety Regulation in the European Union: Toward an Unavoidable Centralization of Regulatory Powers’ (2008) 43 Texas International Law Journal 429.

<sup>15</sup> Commission of the European Communities, ‘White Paper on Food Safety’ <[http://ec.europa.eu/dgs/health\\_food-safety/library/pub/pub06\\_en.pdf](http://ec.europa.eu/dgs/health_food-safety/library/pub/pub06_en.pdf)> accessed 15 January 2017.

<sup>16</sup> European Commission, ‘Legislation’ <[https://ec.europa.eu/food/safety/biosafety/food\\_hygiene/legislation\\_en](https://ec.europa.eu/food/safety/biosafety/food_hygiene/legislation_en)> accessed 15 January 2017.

<sup>17</sup> James Lawless and Klaus Wiedemann, ‘European Meat Inspection-Continuity and Change in Building a (more) Risk-Based System of Regulation’ (2011) European Food and Feed Law Review 96.

long history of food legislation with profound innovations in food management and proactive actions against food-borne diseases, particularly in regards to meat safety.<sup>18</sup> The U.S. food safety laws are comprehensive for specific agricultural commodity, with the *Meat Inspection Act* at the forefront, dating back to 1809.<sup>19</sup> At present, the main provision for meat safety control is the *Federal Meat Inspection Act (FMIA)*.<sup>20</sup> Other related laws includes the Federal Food, Drug, and Cosmetics Act (FFDCA), and the Humane Method of Slaughter Act. Apart from the laws mentioned, there are regulations combined in the U.S. Code of Federal Regulations (CFR) which elaborate each issue in details. To help address the public health challenge of food safety, in 2010 Congress passed the Food Safety Modernization Act (FSMA) which took effect in 2011. The passage of the FSMA marked the first major overhaul of federal food safety emphasizing the prevention of food-borne illness rather than the reaction to disease outbreak.<sup>21</sup>

Singapore, on the other hand, is an exemplary case of ASEAN country with more recent history of food safety laws, yet remarkably powerful ones. Singapore enjoys one of the lowest incidences of food-borne disease outbreaks compared to the rest of the world, despite the fact that around 90% of all food consumed in Singapore is imported.<sup>22</sup> Generally, food safety in Singapore is governed by the Sales of Food Act. Safety of meat products throughout the supply chain is controlled by three main laws depending on stage of production: *Animals and Birds Act (ABA)*, *Feeding Stuffs Act (FSA)*, and the *Wholesome Meat and Fish Act (WMFA)*.<sup>23</sup>

On similarity, the legal measures for meat safety of the United States and Singapore share a common feature in that both countries regulate specific yet comprehensive laws addressing the meat safety control governing the whole supply chain. Moreover, they are based on the same concept that adulterated meat shall be prevented from entering to the

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<sup>18</sup> Robin Johnson, 'Prescriptive Approaches to Food Safety in Meat Products' (2004) 33(3) *Outlook on Agriculture* 151.

<sup>19</sup> Neal D. Fortin, 'Development of Food Legislation around the World: The United States and Canada', in Christine E. Boisrobert and others (eds), *Ensuring Global Food Safety: Exploring Global Harmonization* (Elsevier 2010).

<sup>20</sup> U.S. Department of Agriculture (USDA), 'Federal Meat Inspection Act' <<https://www.fsis.usda.gov/wps/portal/fsis/topics/rulemaking/federal-meat-inspection-act>> accessed 20 February 2016.

<sup>21</sup> Y. Tony Yang and Mathew Swineburne, 'New Produce Safety Regulations: Promises and Challenges' (2016) 131 *Public Health Reports* 754.

<sup>22</sup> Agri-food & Veterinary Authority of Singapore (AVA), 'Food Safety Standards' <<http://www.ava.gov.sg/explore-by-sections/food/food-safety-quality/singapores-food-safety-standards>> accessed 26 January 2017.

<sup>23</sup> AVA, 'Legislation' <<http://www.ava.gov.sg/legislation>> accessed 13 December 2015.

human consumption chain, and thus a holistic approach is essential throughout the meat supply chain. The major factors of concern in the laws of both countries are animal diseases, animal feed and veterinary drug, transportation of animals and meat products, sanitary condition and hygienic practice in the premises. Above all, food safety for domestic consumer protection is on top of priority in both countries.

Aside from the common aspects mentioned above, the two countries place different emphases on legal measures over meat safety, due to difference in size, administrative structure, and amount of meat production activities. Overall, Singapore law is less complicated and more flexible as more discretionary power is assigned to the Director-General. Moreover, there is a marked difference in the allocation of duties between agencies. In general, food safety governance in the United States is seen as a fragmented system, involving various federal agencies and laws.<sup>24</sup> In case of meat, authorities to control safety of most meat, poultry, and egg product in the United States are delegated to the U.S. Department of Agriculture (USDA), while safety of other foods, as well as animal feed, are controlled by the U.S Food and Drug Administration (USFDA). On the contrary, food safety authority in Singapore is more consolidated to one agency, the Agri-food & Veterinary Authority of Singapore (AVA). Secondly, the scope of law is different, especially in slaughter process. *Federal Meat Inspection Act* of the United States is restricted to meat and meat products with very specific definitions.<sup>25</sup> Contrastingly, in Singapore, meat and fish safety are included in the same act titled *Wholesome Meat and Fish Act*, with broader definition.<sup>26</sup> Thirdly, as the provisions concerning cooperation between Federal and State agencies of the United States are emphasized, it is less obvious in the case of Singapore. It should be noted as well that the U.S. has been more proactive in addressing the threat of foodborne illness as a bioterrorist attack.<sup>27</sup>

In the case of Thailand, food safety awareness and governance are relatively young, especially when compared to the U.S. Starting with the *Food Act B.E. 2522* as an umbrella for food quality control, recent years have seen numerous efforts in the development of food safety laws and regulations in Thailand, mainly as responses to international requirements for export. As for legal measures specifically directed at meat safety, the *Control of the Slaughter for Distribution of Meat Act B.E.2559* is presently the

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<sup>24</sup> Stephanie Tai, 'Whole Foods: The FSMA and the Challenges of Defragmenting Food Safety Regulation', *American J. of Law & Medicine*, (2015) 41. 447.

<sup>25</sup> USDA, (n 20).

<sup>26</sup> AVA, 'Wholesome Meat and Fish Act' <[http://www.ava.gov.sg/docs/default-source/legislation/wholesome-meat-and-fish-act/60web\\_wmf\\_processing](http://www.ava.gov.sg/docs/default-source/legislation/wholesome-meat-and-fish-act/60web_wmf_processing)> accessed 13 December 2016.

<sup>27</sup> K. Havas and M. Salman, 'Food security: its components and challenges', *Int. J. Food Safety, Nutrition and Public Health*, (2011) 4 (1).



main law in support of the Food Act. In contrast with the U.S. and Singapore, certain provisions of meat safety control are under several related laws, namely, Animal Feed Quality Control Act B.E. 2558, Agricultural Standards Act B.E. 2551, Animal Epidemics Act B.E. 2558, and Factory Act, B.E. 2535. When compared to the other two countries, Thai laws on meat safety are not as comprehensive in meat categories coverage, and more segmented in terms of governing the entire supply chain. The multi-agency system has posed problems of fragmented authority, but on different aspects and scale from the case of the U.S. In contrast with the other two countries, Thai laws, regulations and enforcements have been more responsive to premium market and exportation.

With regards to compliance with international agreements on standards, the United States as a global leader in Codex Alimentarius has established the U.S. Codex Office with the main goal to facilitate the continued adoption and leadership.<sup>28</sup> Singapore observes stringent food safety standards. As the national authority for food safety in Singapore, the AVA has put in place an effective integrated food safety system to ensure that food is safe for consumption.<sup>29</sup> The country adopts the Codex's Codes in principle with some flexibility in legal requirements. Interestingly, some requirements are more restrictive than those recommended by the Codex's Code. As for Thailand, meat safety regulations generally comply with the Codex's Codes, particularly for exportation. As in various other countries, a Codex Contact Point was set up as coordinating agency to encourage compliances with agreements or guidelines provided by the Codex.<sup>30</sup> Substantial parts of the Codex's Codes have been adopted, but with some limitations set forth in legal requirements.

Comparative analysis of legal measures on meat safety of the three countries in the aspects of *structure*, *agencies*, and *measures* are elaborated further in the following table, thereby revealing their similarities and differences, as well as strengths and weaknesses.

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<sup>28</sup> U.S. Codex Office, 'U.S. Codex Strategic Plan (for 2012-2017)' 4, <[http://www.fsis.usda.gov/wps/wcm/connect/ab59575e-0ccc-4ff5-8ecb-300a0bbf5ffb/US\\_Codex\\_Strategic\\_Plan\\_2012-2017.pdf](http://www.fsis.usda.gov/wps/wcm/connect/ab59575e-0ccc-4ff5-8ecb-300a0bbf5ffb/US_Codex_Strategic_Plan_2012-2017.pdf)> accessed 26 January 2017.

<sup>29</sup> AVA, (n 26).

<sup>30</sup> สำนักงานมาตรฐานสินค้าเกษตรและอาหารแห่งชาติ (มกอช.), 'บทบาทสำคัญของสำนักงานมาตรฐานสินค้าเกษตรและอาหารแห่งชาติ (มกอช.) ในงาน Codex' (National Bureau of Agricultural Commodity and Food Standards (ACFS), 'Roles of the ACFS concerning with Codex's work') <<http://www.acfs.go.th/codex/index.php>> accessed 28 May 2016.

### Comparative Summary of Legal Measures on Meat Safety of the U.S., Singapore, and Thailand

Components	U.S.	Singapore	Thailand
<b>1. Structure</b>	-Specific on meat category -Single law covering safety of both raw and processed meat	-Comprehensive on meat category -Single law covering safety of both raw and processed meat	-Specific on meat category -Specific laws for raw meat and processed meat
<b>2. Agencies</b>	- Multi-agency system - Problems of fragmented authority	- More consolidated to one agency	- Multi-agency system - Problems of fragmented authority
<b>3. Measures</b>	<b>3.1 Primary Production</b> <ol style="list-style-type: none"> <li>1) Premise <ul style="list-style-type: none"> <li>-no obvious provision</li> <li>-voluntary standards</li> </ul> </li> <li>2) Feed and drug control <ul style="list-style-type: none"> <li>-under the same law and agency as those of human</li> </ul> </li> <li>3) Disease control <ul style="list-style-type: none"> <li>-focusing on interstate movement &amp; importation of animal</li> <li>-animal identification as a tool for disease tracing, mandatory in some cases</li> </ul> </li> <li>4) Importation of animal <ul style="list-style-type: none"> <li>-license/permission required</li> <li>-mandatory inspection</li> </ul> </li> </ol>	<b>3.1 Primary Production</b> <ol style="list-style-type: none"> <li>1) Premise <ul style="list-style-type: none"> <li>-no obvious provision</li> <li>-voluntary standards</li> </ul> </li> <li>2) Feed and drug control <ul style="list-style-type: none"> <li>-under specific law for feed</li> </ul> </li> <li>3) Disease control <ul style="list-style-type: none"> <li>-covering domestic control no matter of movement</li> <li>-animal identification as a tool for disease tracing, mandatory in some cases</li> </ul> </li> <li>4) Importation of animal <ul style="list-style-type: none"> <li>-license/permission required</li> <li>-inspection depending on authority's discretion</li> </ul> </li> </ol>	<b>3.1 Primary Production</b> <ol style="list-style-type: none"> <li>1) Premise <ul style="list-style-type: none"> <li>-no obvious provision</li> <li>-voluntary standards</li> </ul> </li> <li>2) Feed and drug control <ul style="list-style-type: none"> <li>-under specific law for feed</li> </ul> </li> <li>3) Disease control <ul style="list-style-type: none"> <li>-covering domestic control no matter of movement</li> <li>-animal identification as a tool for disease tracing, mandatory in some cases</li> </ul> </li> <li>4) Importation of animal <ul style="list-style-type: none"> <li>-license/permission required</li> <li>-mandatory inspection</li> </ul> </li> </ol>

**Comparative Summary of Legal Measures on Meat Safety of the U.S., Singapore, and Thailand** *(cont.)*

Components	U.S.	Singapore	Thailand
<b>3. Measures</b> <i>(cont.)</i>	<b>3.2 Slaughter Process</b> 1) Scope -not as conclusive 2) Control -license/permission required -mandatory inspection -conclusive definition of ‘adulterated’ and ‘unfit for consumption’ -mandatory HACCP and SSOPs 3) Importation of meat -subject to single law	<b>3.2 Slaughter Process</b> 1) Scope -conclusive on animal category 2) Control -license/permission required -inspection depending on authority’s discretion -conclusive definition of ‘adulterated’ and ‘unfit for consumption’ -voluntary HACCP and SSOPs 3) Importation of meat -subject to single law	<b>3.2 Slaughter Process</b> 1) Scope -not as conclusive 2) Control -license/permission required -mandatory inspection -Not so conclusive definition of ‘adulterated’ and ‘unfit for consumption’ -voluntary HACCP and SSOPs 3) Importation of meat -subject to <i>separate</i> laws
	<b>3.3 Other Measures</b> 1) Standard setting. -minimum standards required as mandatory -voluntary standard setting regulated by specific agency in USDA 2) Cooperation/coordination. -problems found among agencies, resolved by the Food Safety Modernization Act	<b>3.3 Other Measures</b> 1) Standard setting. -Minimum standards required as mandatory, -unity in standard setting, regulated by one agency 2) Cooperation/coordination -authority consolidated to one agency, no obvious provisions on cooperation among agencies.	<b>3.3 Other Measures</b> 1) Standard setting. -minimum standards required as mandatory, -standard setting regulated by different laws and agencies 2) Cooperation/coordination -vertical & horizontal problems -overlapping of powers and duties

**Comparative Summary of Legal Measures on Meat Safety of the U.S., Singapore, and Thailand** *(cont.)*

Components	U.S.	Singapore	Thailand
<b>3. Measures</b> <i>(cont.)</i>	<b>3.3 Other Measures</b> <i>(cont.)</i> 3) distribution -unwholesome meat products and uninspected products are prohibited from distribution, regulated by single law. 4) enforcement mechanism -criminal : misdemeanor vs felonies -administrative: refusal/withdrawal inspection, seizure and detention	<b>3.3 Other Measures</b> <i>(cont.)</i> 3) distribution -unwholesome meat products and uninspected products are prohibited from distribution, regulated by single law. 4) enforcement mechanism -criminal: prominent enforcement with presumption clauses, and implementation of strict liability -administrative: suspension/withdrawal of license, seizure and detention, order stoppage of operation	<b>3.3 Other Measures</b> <i>(cont.)</i> 3) distribution -similar provisions to the U.S and Singapore, but regulated by two separate laws. -some ambiguity on the grounds for seizure or detention 4) enforcement mechanism -providing criminal penalties for violations of each provision -administrative: suspension/withdrawal of license , seizure and detention

## Problems and Issues of Meat Safety Control under the Thai Laws

Remarkable efforts in advancing laws and regulations on meat safety have been noted in recent years. Nonetheless, there appears some room for improvements, particularly with regards to quality control for general domestic consumers. Problems are identified at two levels, as follows.

### 1. Problems of the Overall System

*Problems of the Thai legal structure for meat safety.* Fragmentation of Thai laws on meat safety may be a cause of deficiency in law enforcements. Firstly, control of feed quality is under the Animal Feed Quality Control Act, whereas slaughter process is under the Control of Slaughter for Distribution of Meat Act. Moreover, the process after the slaughter, including importation of meat products, is within the scope of the Food Act. Though the processed meat is a category of 'food' in common understanding, such product contains certain specific characteristics which should be handled with specific law and regulations. Aside from the said problem of law fragmentation, there have been efforts driven by production industry to develop another kind of specific law, targeting at certain meat category. As a case in point, the Cattle Beef industry Strategy Committee, in collaboration with the Beef Producers Association, have drafted *Beef Industry Development Act*, which covers regulations specifically on beef, governing beef production industry in a holistic manner throughout the supply chain, with food safety is one key element.<sup>31</sup> If the said draft is approved and enacted as an act, beef shall be the only category of meat covered by this specific law, while meat from other animal origins will remain under the existing fragmented laws.

*Problems in allocation of responsibilities among concerned agencies.* Past research of food safety control system of various countries pointed out that, at the central government level, the problems commonly found are the fragmented, ill-coordinated, unclear responsibility, and dual or multi roles of food authorities.<sup>32</sup> Such mentioned problems are also observed in the case of Thailand. At present, two main agencies are responsible for meat safety control: Thai FDA (*Thai Food and Drug Administration*) under Ministry of Public health, and DLD (*Department of Livestock*) under Ministry of Agriculture and Cooperatives. The DLD's control is limited to the primary production and slaughter, whereas the FDA authorizes meat safety in the processes thereafter. With regards to food standards setting and implementation, more than one agencies are assigned responsibilities under different laws and regulations. For mandatory minimum standards provided by concerned regulations, four agencies, namely, DLD, FDA, and TISI (*Thai Industrial Standards Institute*) are in charge. On the other hand, ACFS (*National Bureau of Agricultural Commodity and Food Standards*) has as its main duty to set both mandatory and voluntary standards and to control the compliance.

Such allocation of power leads to fragmented or redundant control of meat safety. Without adequate coordination between or among these agencies, the control is hardly comprehensive or consistent, as each agency has its own standards and administrative approaches. In any event that problems arise, it may be difficult to trace back to locate the actual cause of such problems, as information is kept separately in each agency. The complication is extended further on the matter of importation and exportation. Exportation of agricultural products, including meat, is under the control of Ministry of Agriculture and Cooperatives, while

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<sup>31</sup> Interview with Matana Osothongs (มีทนา โอสดหงส์), Beef Production Specialist, (5 Apr 2016).

<sup>32</sup> Youngsup Han, 'Food, Risk, and changing food safety control systems: Politics of Food in Four Countries and the EU: A Comparative Perspective' (2006). (Ph.D. thesis Nottingham Trent University).

product importation and rejection are within the authority of the FDA. All these depict a scenario of problematic allocation of responsibility under the present laws<sup>33</sup>

## 2. Problems of Specific Legal Provisions

The examination of the existing provisions reveals several weak points with regards to primary production, slaughter, and standards setting of raw meat. Beginning with the control of *primary productions* as the upstream of the supply chain, certain inadequate provisions are identified, including standards for the animal raising premise, measures to facilitate traceability, animal feed, and transportation of animals. Weak points in provisions are noted as well for the control of *slaughter process*, namely, scope of control (inconclusive definitions of ‘meat’, criteria of condemned meat), management of the ‘unfit for food purpose’ meat, sanitary condition inspection, control of meat with risk-prone origin, and enforcement.

Provisions on *standards setting* are problematic as different standards are set by different agencies, opening room for ambiguity in the implementation of standards. Another issue is concerned with voluntary standards on meat safety provided by the ACFS. With such voluntary basis, it is most likely that upper scale producers and slaughterhouses tend to apply for certification while the smaller counter parts opt to neglecting. Thus, the benefits of such standards tend to be mostly for consumers of the premium market.

## Conclusion and Recommendations

In designing food safety regulations for a developing country, it is worthy to consider that *the benefit of the food safety regime should not be felt mostly by well-connected and affluent consumers, while impacting adversely on poorer and vulnerable consumers*.<sup>34</sup> In agreement with such remark, the author wishes to reinstate that the underlying intention of Thai laws and regulations on meat safety should be placed on a balance of interests for all levels of domestic consumers.

In accordance with the critical review of the current Thai meat safety legislations, combined with the comparative findings across the three countries, recommendations are proposed for a re-examination of the measures being used in Thailand, in the aspects of the legal structure as well as the content of meat safety laws. Key principles and concepts of meat safety control, particularly the precautionary principle and the integrated control governing the entire meat production chain serve as the guiding post for the recommendations.

### *Enhancement of the Existing Provisions*

Firstly, to cope with the immediate problems at hand, enhancement of provisions under the existing laws is suggested with regards to primary production, slaughter, and related measures. To maximize the safety of *primary production*, provisions should be amended on standards setting and monitoring, animal identification and traceability, safety of animal feed, and control of transportation of animals.

For the process of *slaughter*, more conclusive definitions of ‘animal’ and ‘meat’ should be considered along with other related definitions. In terms of coverage, definition by animal category as in the Singapore law should be taken into consideration. Moreover, the criteria of ‘unfit for food purpose’ should also be enhanced by more comprehensive ministerial regulations or notifications. Intensification of legal measures to

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<sup>33</sup> Interview with Thanacheep Peerathornich (ธนชีพ พิระธรนิษฐ์), the Director of Bureau of Food Safety Extension and Support (BFSES), Thailand. (6 October 2015).

<sup>34</sup> Guanqi Zhou, ‘The Regulatory Regime of Food Safety in China: A Systemic not Accidental Failure’ (Ph.D. thesis, University of Adelaide 2016).

ensure safety of raw meat is also further recommended. The prominent recommendation is that management of 'unfit for food purpose' meat should be conducted by methods that ensure safety of meat released into the human supply chain. On the other hand, the laws should promote precautionary principle by requiring the operators to prepare preventive measures and demanding for frequent sanitary condition inspection.

Other recommendations include improved measures for control of imported meat from risk-prone origin, and standards setting. As for enforcement, strict liabilities as mandated in the Singapore law should be considered to simplify the legal procedures.

#### ***Future Alternative: Legal Re-structuring***

As meat production industry evolves with the changing contexts of environment and trading, the author views that meat safety problems in Thailand in the next decades deemed to be more complicated. Solving the emerging problems by pinpointing on particular legal provisions might not be sufficient to handle the complexity. Accordingly, future re-structuring of the meat safety laws is thus proposed, considering first the issue of '*general versus specific laws*' as alternative model of meat safety control to suit the Thai context. In line with the said re-structuring, allocation of responsibilities between the concerned agencies should be adjusted to increase efficiency in meat safety monitoring from raw meat production to processing. In addition, the role of National Food Committee or any other levels of liaison agencies should be enhanced by laws to increase the unity in the control system so that to maximize the continuity of meat safety control in all stages of the supply chain. Lastly, increasing consumer involvement in the legal process is another key element to be considered. Of prime concern, lessons from the reformation of food laws in most developing countries have indicated that the success of such attempt depends on the readiness of the concerned parties and stakeholders of a given country. Likewise, the feasibility of the aforementioned reform of the Thai regulations relies on the readiness, in potentials as well as culture, both in the parts of the government sector and the meat production industry at all levels.

Given the realm of the Thai meat industry, in strengthening the meat safety legislations as proposed, flexibility should be allowed on regulations required for small and medium-scale producers, as long as hygienic condition and safety of meat are not violated.

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